THE

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TO READERS AND CORRESPONDENTS.

All articles intended for the *Original Department* of this Journal must be communicated to it for publication *exclusively*.

Contributors who design to favour us with original articles for the next No. should forward them before the 1st of November.

Compensation is allowed for original articles and reviews, *except* when illustrations or extra copies are desired. A *limited* number of extra copies will be furnished, if the request for them be made when the communication is sent. The extensive circulation of this journal renders extra copies comparatively of little value to authors, who only desire their observations made known to their professional brethren.

Communications are on hand from Drs. J. D. Jackson, Shoyer, Shepard, Daniels, Mathis, Black, and Weist.

The following works have been received:—

Sore Throat: its Nature, Varieties, and Treatment; including the Use of the Laryngoscope as an Aid to Diagnosis. By M. Prosser James, M. D., Senior Physician to the City Dispensary, etc. etc. etc. Second edition. Illustrated. London: John Churchill & Sons, 1866.

The True and False Sciences. A Letter on Homœopathy. London: John Churchill & Sons, 1866.

Defects of Sight and Hearing: their Nature, Causes, Prevention, and General Management. By T. Wharton Jones, F. R. S., F. R. C. S., Professor of Ophthalmic Medicine and Surgery in University College, London, etc. etc. etc. Second edition of "Defects of Sight." London: John Churchill & Sons, 1866.

Notes on Health in Calcutta and British Emigrant Ships, including Ventilation, Diet, and Disease. By W. H. Pearse, M. D. Edin., Government Emigration Service. London: John Churchill & Sons, 1866.

Brief Remarks on Cholera: being the Result of Observations during the two last Outbreaks of Cholera in England; and an Attempt to advance a Theory of that Disease which shall lead to a more consistent Method of Treatment, to which is added a short Table of Practical Rules for General Use during an Epidemic. By Robert J. Spitta, M. D. Lond. London: John Churchill & Sons, 1866.

The Elements of Prognosis in Consumption, with Indications for the Prevention and Treatment. By James Edward Pollock, M. D., F. R. C. P.; Physician to the Hospital for Consumption and Diseases of the Chest, Brompton, etc. etc. etc. London: Longmans, Green & Co., 1865.

Clinical Memoirs on the Diseases of Women. By M. Gustave Bernutz, Physician to La Pitié, and M. Ernest Goupil, late Physician to the Bureau Central. In two volumes. Vol. I. Translated and edited by Alfred Meadows, M. D. Lond., Physician to the Hospital for Women, Soho Square, and to the General Lying-in Hospital, etc. etc. etc. The New Sydenham Society, London, 1866.

Atlas of Surgical and Topographical Anatomy. By B. J. Béraud, Surgeon and Professor to the Maternity Hospital of Paris, Vice-President of the Biological Society, etc. etc. etc. Illustrated by one hundred plates drawn from nature by M. Bion. Translated by Robert Thomas Hulme, M. R. C. S. Eng. Parts 1, 2, 3. London: H. Baillière, 1866.

Cholera: its Nature, Cause, and Treatment, Simply, Scientifically, and Practically Explained. By C. Searle, M. D., M. R. C. S. E. London, 1866.

On Safe Anæsthesia in Labour. By Robert Ellis, Surgeon-Accoucheur to the Chelsea, Brompton, and Belgrave Dispensary, etc. etc. etc. With a description of the fluids and apparatus manufactured by Savory & Moore, 143 New Bond Street. London, 1866. (From the Author.)

Untersuchungen über das Entstehen der Hippursäure im thierischen Organismus. Von Dr. G. MEISSNER, Professor in Göttingen, und C. U. SHEPARD, aus New-Haven. Mit einer lithographirten Tafel. Hannover, 1866. (From Dr. C. U. Shepard.)

Manual of Materia Medica and Therapeutics: being an Abridgment of the late Dr. Pereira's Elements of Materia Medica, arranged in conformity with the British Pharmacopœia, and adapted to the Use of Medical Practitioners, Chemists and Druggists, Medical and Pharmaceutical Students, &c. By JOHN FREDERIC FARRE, M. D. Cantab., F. L. S., F. R. C. P. London, Honorary Member of the Pharmaceutical Society of Great Britain, etc. etc. etc. Assisted by ROBERT BENTLEY, M. R. C. S., F. L. S., Honorary Fellow of King's College, London, Professor of Botany in King's College, etc. etc. etc.: and by ROBERT WARRINGTON, F. R. S., F. C. S., Chemical Operator to the Society of Apothecaries, and Vice-President of the Chemical Society. Edited, with numerous References to the U. S. Pharmacopœia, and many other Additions, by HORATIO C. WOOD, Jr., M. D., Professor of Botany, University of Pennsylvania, Auxiliary Faculty of Medicine; Member of the American Philosophical Society, etc. etc. etc. With two hundred and thirty-six wood engravings. Philadelphia: Henry C. Lea, 1866.

A Practical Treatise on Fractures and Dislocations. By FRANK HASTINGS HAMILTON, A. M., M. D., Professor of the Principles of Surgery, Military Surgery and Hygiene, and of Fractures and Dislocations in Bellevue Hospital Medical College, etc. etc. etc. Third edition, revised and improved. Illustrated with two hundred and ninety-four wood-cuts. Philadelphia: Henry C. Lea, 1866.

A Practical Treatise on the Physical Exploration of the Chest, and the Diagnosis of Diseases affecting the Respiratory Organs. By AUSTIN FLINT, M. D., Professor of the Principles and Practice of Medicine in the Bellevue Hospital Medical College and in the Long Island College Hospital, etc. etc. etc. Second edition, revised. Philadelphia: Henry C. Lea, 1866.

Medical Electricity: embracing Electro-Physiology and Electricity as a Therapeutic, with Special Reference to Practical Medicine; showing the most approved Apparatus, Methods, and Rules for the Medical Uses of Electricity in the Treatment of Nervous Diseases. By ALFRED C. GARRATT, M. D., Fellow of the Massachusetts Medical Society, &c. &c. Third edition, revised and illustrated. Philadelphia: J. B. Lippincott & Co., 1866.

Medical Diagnosis, with Special Reference to Practical Medicine. A Guide to the Knowledge and Discrimination of Diseases. By J. M. DACOSTA, M. D., Lecturer on Clinical Medicine and Physician to the Pennsylvania Hospital, F. C. P. Philadelphia, etc. etc. etc. Illustrated with engravings on wood. Second edition, revised. Philadelphia: J. B. Lippincott & Co., 1866.

A Guide to the Practical Study of Diseases of the Eye; with an Outline of their Medical and Operative Treatment. By JAMES DIXON, F. R. C. S., Surgeon to the Royal London Ophthalmic Hospital, Moorfields. From the third London edition. Philadelphia: Lindsay & Blakiston, 1866.

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Chemical Tables. By STEPHEN B. SHARPLESS, S. B. Cambridge: Sever & Francis, 1866.

A Treatise on the Origin, Nature, Prevention, and Treatment of Asiatic Cholera. By JOHN C. PETERS, M. D. New York: D. Van Nostrand, 1866.

Clinical Lectures by Professor A. Von Graefe, on Amblyopia and Amaurosis, and the Extraction of Cataract. Translated from the German by HASKET DERBY, M. D., Surgeon to the Massachusetts Charitable Eye and Ear Infirmary, etc. etc. Boston: David Clapp & Son, 1866.

Disinfectants. By E. R. SQUIBB, M. D., of Brooklyn, N. Y. New York, 1866.

On Excision of the Superior Maxilla. Report of a Case, with Remarks on certain Tumours of this Bone. By Wm. R. Whitehead, M. D. (Univ. of Paris), formerly Professor of Clinical Medicine in the New York Medical College, etc. New York, 1866. (From the Author.)

Epidemic Cholera: its Pathology and Treatment. By A. B. Palmer, M. D., Professor of Pathology, the Practice of Medicine, and of Hygiene in the University of Michigan, etc. etc. etc. Detroit, 1866.

Cystic Tumours of the Jaw. By J. Mason Warren, M. D. Boston, 1866. (From the Author.)

Whiskey and Tobacco: their Effects upon Soldiers and others. By Paul F. Eve, M. D., Professor of Surgery in the University of Nashville. Nashville, Tenn., 1866. (From the Author.)

Observations upon the Cranial Forms of the American Aborigines, based upon Specimens contained in the Collection of the Academy of Natural Sciences of Philadelphia. By J. Aitken Meigs, M. D., Member of the Academy of Natural Sciences of Philadelphia, Fellow of the College of Physicians, etc. Philadelphia, 1866.

The Hunterian Ligation of Arteries, to Relieve and to Prevent Destructive Inflammation. By Henry F. Campbell, M. D., Professor of Anatomy in the New Orleans School of Medicine, etc. etc. etc. Augusta, Ga., 1866. (From the Author.)

Transactions of the Indiana State Medical Society, at its Sixteenth Annual Session, held at Indianapolis, May 15, 16, and 17, 1866. Indianapolis, 1866.

Transactions of the Vermont Medical Society, for the year 1865. Burlington, 1866. (From the Society.)

Proceedings of the Academy of Natural Sciences of Philadelphia, April and May, 1866. Philadelphia, 1866.

Seventeenth Annual Report of the Indiana Hospital for the Insane, for the year ending October 31, 1865. To the Governor. Indianapolis, 1866.

Second Annual Report of the New York State Inebriate Asylum. Transmitted to the Legislature, February 13, 1864. Albany, 1863.

Eighth Annual Report of the Chicago Charitable Eye and Ear Infirmary, for the year ending May 1, 1866. Chicago, 1866.

An Address by the Citizens' Association of Pennsylvania to the People, with Act of Incorporation. Philadelphia, 1866.

Report of the Board of Health of the City and Port of Philadelphia to the Mayor, for 1865. Philadelphia, 1866.

The following Journals have been received in exchange:—

Revue de Thérapeutique Médico-Chirurgicale. Par A. Martin-Lauzer, M. D. Nos. 12, 13, 14, 15, 16, 17, 1866.

Journal de la Physiologie de l'Homme et des Animaux. Publié sous la direction du Docteur Brown-Séquard. Numero 24, Octobre 1863. Publié en Décembre, 1865.)

Annales Médico-Psychologiques. Par MM. les Docteurs Baillarger et Cérise. January, March, 1866.

The Half-Yearly Abstract of the Medical Sciences. Vol. XLIII. January—June, 1866. London: John Churchill & Sons, 1866.

The British and Foreign Medico-Chirurgical Review. July, 1866.

The Retrospect of Medicine. Edited by W. Braithwaite, M. D., and James Braithwaite, M. D. Vol. LIII. January—June, 1866.

The Medical Times and Gazette. June, July, August, 1866.

The British Medical Journal. Nos. 274, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 1866.

Edinburgh Medical Journal. June, July, August, 1866.

The Glasgow Medical Journal. May, June, July, 1866.

The Medical Mirror. June, July, August. 1866.

The Medical Press and Circular. June, July, August, 1866.

The Dublin Quarterly Journal of Medical Science. August, 1866.

The Madras Quarterly Journal of Medical Science. January, April, 1866.

Canada Medical Journal. Edited by G. E. Fenwick, M. D., and F. W. Campbell, M. D., L. R. C. P. L. June, July, 1866.

The Boston Medical and Surgical Journal. Edited by Samuel L. Abbot, M. D., and Jas. C. White, M. D. July, August, September, 1866.

The American Journal of Insanity. Edited by the Medical Officers of the New York State Lunatic Asylum. July, 1866.

The Cincinnati Lancet and Observer. Edited by Edward B. Stevens, M. D., and John A. Murphy, M. D. July, August, September, 1866.

The St. Louis Medical and Surgical Journal. Edited by M. L. Linton, M. D., and Frank W. White, M. D. July, August, 1866.

The New York Medical Journal. July, August, September, 1866.

The Medical Record. July, August, September, 1866.

The Chicago Medical Examiner. Edited by N. S. Davis, M. D. July, August, September, 1866.

The Buffalo Medical and Surgical Journal. Edited by Julius F. Miner, M. D. July, August, 1866.

The Chicago Medical Journal. July, August, September, 1866.

The Medical and Surgical Reporter. Edited by S. W. Butler, M. D. July, August, September, 1866.

The Cincinnati Journal of Medicine. Edited by Geo. C. Blackman, M. D., Theophilus Parvin, M. D., and Roberts Bartholow, M. D. July, August, September, 1866.

The Richmond Medical Journal. Edited by E. S. Gaillard, M. D., and W. S. McChesney, M. D. July, August, September, 1866.

The Savannah Journal of Medicine. Edited by Juriah Harris, M. D., J. B. Read, M. D., and J. G. Thomas, M. D. June, July, 1866.

The Medical Reporter. Edited by J. S. B. Alleyne, M. D., and O. F. Potter, M. D. July, August, September, 1866.

Atlanta Medical and Surgical Journal. Edited by J. G. Westmorland, M. D., and W. F. Westmorland, M. D. July, August, September, 1866.

The Medical and Surgical Monthly, Memphis, Tennessee. Edited by Frank A. Ramsey, M. D., D. D. Saunders, M. D., E. Miles Willett, M. D., and Wm. H. White, M. D. June, July, 1866.

Southern Journal of Medical Sciences. Edited by D. Warren Brickell, M. D., C. Beard, M. D., and W. S. Mitchell, M. D. August, 1866.

The Pacific Medical and Surgical Journal and Press. Edited by Henry Gibbons, M. D. June, August, 1866.

The Nashville Journal of Medicine and Surgery. Edited by Profs. W. K. Bowling and Paul F. Eve. July, August, September, 1866.

The Galveston Medical Journal. Edited by Greensville Dowell, M. D. April, July, August, 1866. (Nos. for May and June have not been received.)

Southern Medical and Surgical Journal. Edited by Joseph Jones, M. D. July, 1866.

The Detroit Review of Medicine and Pharmacy. Edited by Geo. P. Andrews, M. D., S. P. Duffield, Ph. D., and E. W. Jenks, M. D. July, August, September, 1866.

The New Orleans Medical and Surgical Journal. Edited by Warren Stone, M. D., James Jones, M. D., Stanford E. Chaille, M. D., and William C. Nichols, M. D. July, 1866.

The American Journal of Pharmacy. Published by Authority of the Philadelphia College of Pharmacy. Edited by William Procter, Jr. July, September, 1866.

The Druggists' Circular and Chemical Gazette. July, August, Sept., 1866.

The Journal of Materia Medica. Conducted by Joseph Bates, M. D., and H. A. Tilden. July, August, September, 1866.

The Dental Cosmos. Edited by J. H. McQuillen, D. D. S., and George J. Ziegler, M. D. August, September, 1866.

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Studies on Diabetes, by Dr. Abel Jordão, communicated February 24, 1863, and published in the "Memorias da Academia Real das Sciencias de Lisboa." pp. 200, quarto. Lisbon, 1865. . . . 467
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XX. Transactions of American State Medical Societies:—
1. Fifteenth Anniversary Meeting of the Illinois State Medical Society, held at Bloomington, May 2d and 3d, 1865. 8vo. pp. 152.
2. Transactions of the Vermont Medical Society for the year 1865. 8vo. pp. 62.
3. Transactions of the Indiana State Medical Society at its Sixteenth Annual Session held at Indianapolis, May 15th, 16th, and 17th, 1866. 8vo. pp. 110. 489
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1. Cholera in its Home. With a Sketch of the Pathology and Treatment of the Disease. By John Macpherson, M. D., late Deputy Inspector-General of Hospitals H. M. Bengal Army, and formerly of the European General Hospital, Calcutta, &c. &c. Small 8vo. pp. 155. London: John Churchill and Sons, 1866.
2. Cholera: Facts and Conclusions as to its Nature, Prevention, and Treatment. By Henry Hartshorne, A. M., M. D., Professor of Hygiene in the Auxiliary Faculty of Medicine Univ. Penn. 12mo. pp. 79. Philadelphia: J. B. Lippincott & Co., 1866.
3. Epidemic Cholera: Its Pathology and Treatment. By A. B. Palmer, M. D., Prof. Pathol., the Pract. Med. and of Hygiene in the Univ. of Michigan, &c. &c. 8vo. pp. 33. Detroit, 1866.
4. Cholera: Its Characteristics, History, Treatment, Geographical Distribution of Different Epidemics, Suitable Sanitary Preventions, &c. Illustrated with Lithographic Maps and Microscopic Drawings. Reprinted with Additions from the "Cincinnati Journal of Medicine." By William B. Fletcher, M. D. Cincinnati, 1866.
5. A Communication from the City Physician on Asiatic Cholera. Is it a contagious disease? 8vo. pp. 41, with two maps. Boston, 1866.
6. Memoranda on Asiatic Cholera, its Mode of Spreading, and its Prevention. By William Budd, M. D., &c. 8vo. pp. 21. Bristol, 1865.
7. Brief Remarks on Cholera: being the result of Observations during the two last outbreaks of Cholera in England and an attempt to advance a theory of that disease which shall lead to a more consistent method of treatment, &c. By Robert J. Spitta, M. D. London, 1866.
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XXIV. Reflex Paralysis: its Pathological Anatomy, and Relation to the Sympathetic Nervous System. By M. Gonzales Echeverria, M. D. (Univ. of Paris), Physician to the Charity Hospital, New York; formerly Assistant Physician to the National Hospital for the Paralyzed and Epileptic, of London, etc. etc. 8vo. pp. 80. New York: Baillière Brothers, 1866. 511

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OF THE MEDICAL SCIENCES

FOR OCTOBER 1866.

ART. I.—*Observations on Spotted Fever.* By WM. O. BALDWIN, M. D., of Montgomery, Ala. Read before the Medical and Surgical Society of Montgomery, April 2d, 1866. (Published by order of the Society.)

I HAVE recently met with a few cases of disease of a very malignant and fatal character, which I am persuaded has never prevailed in this section until within the past few weeks. Indeed, judging from the scanty records which we are enabled to find on the subject by medical historians, I am much inclined to the belief that the disease has not prevailed very often in any country. Most of our systematic works on the practice of medicine make no allusion to it, whilst others treat of it in a very unsatisfactory manner—generally confounding it with other and very different diseases. The following notes of three cases of disease occurring in this place, and proving fatal, will, probably, give a better idea of its nature than I could do by simply reading you a synopsis of them.

CASE I. *March* 4. Was sent for in the morning by Mr. D——, to see his little daughter, "Mary Lou," aged about eight years. When I entered the room the family informed me that they had sent for me to see a case of smallpox, and presented this little girl, who was sitting in a chair before the fire looking very cheerful and well. On examination I discovered the neck and upper portions of the breast to be thickly covered with dark red or purple spots, varying in size from a duck-shot to a common sized pea. This eruption was not elevated above the skin, and did not recede under pressure. I did not examine the skin under the clothes. I thought the eruption was a singular one under the circumstances, but as the child appeared well otherwise and did not complain, I made no farther examination than to feel her pulse and examine her tongue, which appearing natural, I simply remarked to the parents that they need have no fears about small-

pox, and made no prescription for her. I was preparing to leave the house, when I was told by the family that they wished me to see an old negro woman in the kitchen, who had been complaining for several days. This I found to be a case with the primary fever of smallpox. On the following morning the eruption made its appearance and she was removed to the hospital.

5th, 6 o'clock P. M. Was sent for to see little "Mary Lou," who had just had a chill. Had been much troubled and grieved at the removal of the old woman from the house this morning. She had been her nurse, and she was much attached to her, and the family attribute her present illness to nervousness arising from the distress of mind under which she has been labouring through the day. Pulse, 150 and very soft; surface rather cool; tongue coated white; bowels constipated; tonsils slightly enlarged, of a pale yellow colour and covered with aphthous ulcerations. Seems to be very uncomfortable generally. From the violence of the chill, the appearance of the throat and general distress, I apprehended a severe attack of scarlet fever. Ordered a dose of castor oil, a mixture of hydrochloric acid and chlorate potassæ; and a gargle of sage, alum and honey to-night; also a solution of nitrate of silver, with which I expected to cauterize the throat early next morning.

12 o'clock, night. Sent for. Pulse 170 and soft, skin moderately hot, nausea and occasional vomiting, extremely restless, tossing about in bed and apparently in much pain. She does not appear to be delirious, but gives no satisfactory answers to questions. No motion from bowels. Ordered enema, mustard plasters, and diaphoretic mixture.

6th. 8 o'clock A. M. Passed a very restless night, tossing about in bed; breathing short and hurried; pulse very feeble and intermittent; sordes on teeth; still seems intelligent, but gives no satisfactory answers to questions; countenance anxious; face pale and sunken; skin moist and cooler; surface generally cadaverous; bowels moved twice during the night. A few hours after this there was a feeble effort at reaction, and pulse became somewhat stronger, which, however, lasted but a short time, when it failed again, and the surface became of a dusky, purplish hue, deeper at the extremities, and she gradually sank from this time and died at two o'clock P. M.—just twenty hours from the chill. Dr. Dillard saw this case with me and said he thought he had recently seen some cases like it, which were attended with a like result, and which he considered cases of suppressed smallpox. Stimulants were used during the latter stages, but without effect.

CASE II. *March* 13, 6 o'clock P. M. Was called to see Miss F. T——, a young lady, aunt to the little girl "Mary Lou"—living in the same house, and who was her constant nurse during her last illness. Found her in a heavy chill, with severe rigors or shivering fits. She was sitting in a chair before the fire. Countenance very pale. Has sore throat, which she has complained of for several days. Has had something of a diarrhœa for some days previous to yesterday; bowels now constipated; tongue covered with a dirty white fur, moist. Pulse much accelerated and feeble. Complains of pains in her extremities and a general uneasy and distressed feeling; the rigors and shivering fits are exceedingly severe. I had been prescribing for her, for dyspepsia occasionally, for a few months past, and being informed that in addition to her usual meal for dinner, which she took about two o'clock, she had also eaten rather freely of a potato pudding sent in a few hours after by one of the neighbours, I was inclined to

think these rigors were the nervous chills which we sometimes meet with in dyspeptics, from indigestion, and that they would not be followed by any great amount of febrile reaction. Ordered warm water to be drunk freely until vomiting is produced; after which, directed her to take half a teaspoonful of bi-carb. soda in half a tumbler of water, with two teaspoonfuls of paregoric. Hot applications and hot ginger tea. 9 o'clock P. M., was sent for in consequence of agonizing pains in arms, wrists and legs. She held her arms in such a position and complained of them in such a way as to lead me to suspect that she might have an acute neuralgic rheumatism, and I so expressed myself to the family. The slightest touch, even the laying of the hand gently upon the wrist to feel the pulse caused her to scream out with pain. Her agony seemed most intense. At times she complained of a general numbness—sometimes she would say she was paralyzed. Occasionally she would cry out from pain in this or that toe or finger. Sometimes she would complain of pain in the head, but the place to which she most commonly referred the severest pain was in the wrist of the left arm, though she would frequently say she was "in pain all over." Her screams from pain and cries for help were so constant and unremitting that it was somewhat difficult to question her, and caused both her attendants and myself to remonstrate with her. Breathing remarkably hurried and distressed; pulse 150 and fuller; skin hot; face flushed, eyes red and watery. Has vomited contents of stomach and used other remedies ordered. Was told that she seemed much exhilarated after reaction came on—making jocose and pleasant remarks to servants and other attendants. Chill lasted between two and three hours. Ordered, R.—Calomel gr. vj, pulv. opii gr. $\frac{1}{2}$, M.—to be made into pill and taken at once, and pulv. Dov. camph. gr. viij; the Dovers powder to be repeated in two hours if pain and distress continue. Also a diaphoretic mixture of sp. nit. dulc. and chlorat. potass., with quinia, in the morning—six grs. at six o'clock, to be repeated every three hours until eighteen grs. have been taken.

14*th*, 7 o'clock A. M. Has spent a wretched night; slept but a few minutes at a time, and when awake screaming with pain in extremities and abdomen, those in abdomen resembling a severe attack of colic. Arms extremely tender and painful to the touch; wrists slightly swollen and somewhat stiff. Arms held mostly in one position, the slightest movement or touch causing increased pain. Complains of great numbness and paralysis in extremities, and a sense of general prostration; breathing much distressed, short, and very rapid. One of the attendants told me she was a little delirious through the night at times, but mind is clear now; eyes present a reddened, languid, heavy, and dull appearance. Has suffered much with nausea through the night, and vomited several times. Her general distress now seems to be extreme. Pulse 112, very feeble, soft, and intermittent; skin cooler, but still above the normal temperature. Took the six grains quinia at 6 o'clock, which was vomited and immediately repeated and retained. No motion from bowels. Ordered one teaspoonful of Henry's magnesia. 10 o'clock A. M., sent for. As soon as I entered her room the patient, looking at her hands and wrists, informed me she had smallpox. On examination I found the back of the hands, wrists, forearms, feet, and legs, covered with spots of a dark red colour, generally about the size of an English pea, some smaller, some larger; no elevation of skin and spots remaining under pressure. In form they are generally circular, though in a few instances, particularly those nearest the elbow, they are irregularly shaped, presenting an ecchymosed or bruised appear-

ance. Ordered warm heating applications and no other alteration in prescription. Quinia continued. 11 o'clock A. M. Invited my partner Dr. J. M. Williams to see her with me in consultation. Pulse 120, pains and general distress unabated, and no other material alteration. Ordered morphia gr. ¼ every second hour, and brandy as freely as it can be taken, hot applications; and also liquor ammon. acetatis. 3 o'clock P. M. Countenance anxious and expressive of deepest suffering. Pulse has been almost extinct at the wrist since last report, with cold and livid extremities. Now stronger and fuller with a heavy perspiration and warm surface. Says she feels the effect of the quinia in head—18 grs. of which have been taken. Hands though warmer have a mottled appearance. Skin over knuckles and other joints of upper extremities red and mottled. Nausea not so great. Pains, numbness, hurried breathing and general distress continue unabated. Continue morphia and brandy. 9 o'clock P. M. Pulse again very feeble, rejects brandy, ordered champagne instead; continue morphia and give lime-water; apply blister 6 by 8 to stomach. Dr. Williams will remain with her through the night.

15*th*, 7 o'clock A. M. Had passed a miserable night; was constantly screaming from pain with scarcely any intermission. Her sufferings, as described by Dr. Williams, were distressing to witness. He gave her chloroform with but little or very temporary relief. Pulse almost imperceptible; refuses almost everything offered by the mouth. Petechiæ or purple spots of a darker color. Pupils very small, contracted almost to a point; no motion from bowels; nausea and vomiting, with troublesome eructations of gas. The arms have a hard inelastic and stiffened feel; mental faculties tolerably clear. Ordered blister to spine three by twelve inches. Continue wine and stimulants. 9 o'clock. Invited my friend, Dr. J. S. Weatherly, to see her. Condition pretty much as at last report; gave her one-third grain of morphia with hypodermic syringe, and ordered aromat. sulph. acid. Continue stimulants as before. 11 o'clock A. M. Invited Dr. Dillard to see her with me. Pulse scarcely perceptible; countenance anxious, breathing short and rapid; extreme prostration; numbness and paralysis continue; sordes on teeth; mind clear. Hypodermic dose of morphia had no effect in controlling pain, which continues distressing notwithstanding the vital powers are failing so rapidly.

I now despaired of being able to do anything for her, and being much pressed with professional engagements, requested Dr. Dillard to remain with her, and did not see much more of her until she had had two convulsions, which occurred between three and four o'clock P. M. I saw her at four o'clock, found her without any pulse, with the surface generally, but more especially the extremities, of a dark purplish hue, and breathing rather stertorous but still hurried. I supposed her to be moribund, and left her without a perscription, though I was told by the attendants that she had another violent convulsion afterwards and did not die until six o'clock P. M. Dr. Williams saw her in the second convulsion, and described it as being one of the most violent he had ever witnessed. The family tell me that the first convulsion was even more violent than the one witnessed by Dr. Williams. Death occurred exactly forty-eight hours after the invasion of the disease. Through feelings of delicacy I did not request a post-mortem examination. Examined the eruption on her arms eighteen hours after death—spots very distinct, of rather a brighter purple than when noticed a few hours before death. Was informed by the ladies who dressed her for the grave that these spots were larger and much more numerous on

thighs, hips, back of neck, and around her waist. Considerable swelling of abdomen came on before death, and has much increased since.

CASE III. Reported to me by my friend Dr. A. M. Oliver, who was on the night of the 19th requested to visit Mrs. McD——, aged about twenty-four years. In consequence of the illness of his own wife he was unable to visit her, but prescribed morphia and brandy. Having his suspicions somewhat excited as to the nature of the disease by the history which was given to him of the case by the husband when he came to request him to visit her, and on next morning, learning that she had died at two o'clock on the previous night, he was induced to visit the house and learn more particularly the circumstances and history of the case. These he obtained from the husband and female attendant, which were substantially as follows:—

She had sore throat on day before attack (18th), with some bleeding from nose. About two o'clock P. M. on 19th she was attacked with very severe pain in left wrist, which was followed in about fifteen or twenty minutes by a chill attended with severe shivering, chattering of the teeth, &c., which lasted two or three hours. Accompanying the chill there was violent pain in the wrist, extremities generally, as well as in the head and back, which continued distressing throughout the attack. Surface rather cool, and pulse frequent and weak throughout. Had a mild cholera morbus, producing five or six operations from bowels, with nausea and occasional vomiting, and troublesome eructations of gas. Great prostration, with numbness, restlessness, and constant tossing about in bed. Breathing quick and distressed; stiffness of wrists, hands, arms, and neck; purple spots varying in size from the head of a pin to that of a three-cent piece on neck, face, breast, abdomen, arms, and surface generally were observed about the commencement of the attack by the female who assisted her to undress for bed. She had several fainting fits, in one of which she died about two o'clock A. M. on the 20th—the attack having lasted just twelve hours from the time she felt the pain in her wrist. Dr. O. examined the body himself, and found nothing but the purple spots referred to with a general livid appearance of the surface.

In addition to the above I have, through the kindness of professional friends, seen three other cases of this disease occurring subsequently. In one of them only I assisted in the management of the case. Two of them are entirely convalescent, the other resulted in death. These also were females.

The simple narration of three cases of disease, wearing to us a strange and fearful livery, might of itself be calculated to awaken in our minds some feeling of curiosity and interest. But when it is attempted to be shown that these isolated cases are probably the heralds of a fearfully fatal epidemic, similar to that which more than fifty years ago ravaged other portions of this continent, and whose track of desolation and death was said to be equalled only by that of the plague, then they become a subject for our profoundest consideration, and demand our deepest and severest scrutiny.

It is not an easy matter to detect at first sight a disease which has never

been seen before, if it be one varying much in its mode of attack and general appearance, and more especially if it be one which has prevailed so seldom in the history of the world as to attract but little notice from medical writers. It has now been more than half a century since we have had any published medical account of the prevalence of this disease anywhere on the globe, and our accounts of it previous to that period have been but few, and at long intervals of time.

After the fatal termination of the first of these cases I frankly told the family I did not comprehend the disease—that it was new to me, and I could not give it a name, and indeed if I had been familiar with the history and features of the disease in question, the aggregation of symptoms in this particular case taken by itself, was not sufficiently distinct and satisfactory to justify me in assigning it to a nomenclature so foreign and new to this section. I suggested that it probably was a case of undeveloped scarlet fever which had invaded the system with such power and malignity as to overwhelm the vital powers before sufficient time had been allowed for the full development of its distinctive and characteristic features. And with this explanation I should probably have rested my own mind, had not my curiosity been still further excited by the appearance in the same family of another case presenting a similar identity. I searched all the systematic works on the practice of medicine at my command, besides numerous monographs on eruptive and other malignant fevers, without finding any elucidation to my perplexity. I had a vague recollection of having read a description of a disease resembling it many years ago under the head of "Spotted Fever," but the few works in which I could find "Spotted Fever" mentioned treated of it as a form of typhus, and a disease of long duration. I also talked with several of my professional friends without obtaining any satisfactory information. I invited, at different times, my friends, Dr. J. M. Williams, Dr. Dillard, and Dr. J. S. Weatherly, to visit and examine the patients with me—none of them had ever met with a similar disease. Dr. Weatherly said he had never seen or read of a malady resembling it, but stated that he had *heard* of a very fatal disease which had prevailed in some portions of the State of Georgia, called "Spotted Fever," and suggested from the purple spots and other general malignant appearance of this case, as well as from the entire want of analogy between this and any other disease which we are in the habit of meeting here, that this might be of that character.

My mind was deeply interested in the subject, and in searching still farther through my library to gain some clue, or to gather some information about the disease which was so strange and novel to me, I came across a little book entitled *A Treatise on a Malignant Epidemic, commonly called Spotted Fever*, by Dr. Elisha North, of Goshen, Connecticut, published in 1811. On opening this little volume I discovered that the disease with which I had been dealing, and which had so worried and perplexed me, was nothing less than the deadly spotted fever, and was there

described with the most perfect accuracy. In this book is also republished a number of essays on the disease by different authors as it prevailed in New England from 1806 to 1810. This, with the report made to the Massachusetts Medical Society by a committee appointed for that purpose, composed of Drs. Walsh, Jackson, and J. C. Warren, contains all that is known of this disease of any interest or value that I have been able to meet with up to the present time.

The disease first made its appearance on this continent in the town of Medfield, Mass., and afterwards in Connecticut, Vermont, Rhode Island, New York, and other sections from 1806 to 1810. The accounts which we have of it are from physicians, presidents of colleges, clergymen, editors, and other persons, all concurring that it was a most dreadful and fatal malady—coming among them "like a flood of mighty waters, bringing along with it all the horrors of a most dreadful plague." Most of the physicians who wrote on it about that period, call it "a new and strange disease," "a singular and fatal malady," and there is no reference or allusion by most of them to its having occurred in any other country, or at any other era of the world's history. Some one has suggested that it is the disease treated of by Sydenham in his "Febris Nova," but I have recently read this account, and am satisfied that the author in his treatise under this head had reference to a form of typhus, differing materially from spotted fever, and that he nowhere in his work has described a condition bearing any striking similitude to it. Dr. Arnell, in his account of the spotted fever which prevailed in Orange County, N. Y., in the epidemic spoken of as having occurred in the early portion of the present century (republished in Dr. North's book), says, in reading the *Medicus Novissimus*, which was published about the beginning of the eighteenth century, he found a fever there described as prevailing about London, partaking of all the most prominent symptoms of spotted fever. The following is an extract which he makes from that work, and which is probably the oldest account on record of a disease bearing a very strong resemblance to it:—

"It is attended with very severe symptoms, as violent pains of the head and stomach, frequent shivering, and a sudden but very great weakness without manifest cause, anxiety and pains in the back and loins; the breath smells strong; there is great thirst, continual waking, spots sometimes appear on the body, the pulse is unequal and very low; urine not so high coloured as in simple fevers. There are sometimes convulsions, delirium, &c. &c. * * * * This is a very dangerous disease, and often kills in a very little time. If the hands tremble much when the pulse is felt the disease doth most commonly end in death, especially if there be a foul tongue, a ghastly countenance, and the eyes sunk in the head. The cure must be undertaken as soon as possible, for this disease admits of no delay."

Our descriptions of spotted fever, until it made its appearance on this continent about the beginning of the present century, have generally been

so meagre and scant as to afford no very satisfactory information regarding its previous history. It is said to have prevailed in many portions of the world since the beginning of the sixteenth century, but I have been enabled to find no record of a disease similar in all its aspects to the cases recently witnessed by me, except the one described by the physicians of New England as occurring from 1806 to 1810. Certain it is that it is a disease of rare occurrence; for, one possessing such striking and anomalous features could not have failed to have attracted more general notice from medical philosophers and historians than has been accorded to this, if it had been very frequently met with.

In the main there is great uniformity in the descriptions of the disease by those who observed it as it prevailed on this continent in the beginning of the present century. I have read perhaps a dozen accounts of it as it occurred in different localities—all concurring in the material and striking features of the disease, with perhaps one exception—I have in my library a work written by "Dr. E. Hale on Spotted Fever as it appeared in Gardiner, Maine, in the spring of 1814." I do not think that many of the cases detailed by this author were similar to those described by the physicians of New England in the epidemic which prevailed from 1806 to 1810, or to those recently met with by myself.

Of all the descriptions of the disease which I have read, that which gives to my mind the most comprehensive and faithful picture, is the one by Dr. Elisha North, before referred to; and, for the purpose of showing the analogy between the disease described by him as spotted fever, and the cases which I have detailed in the beginning of this article, I propose to transcribe a portion of one of his chapters.

In regard to the premonitions of the disease our author says: "If there is any one symptom which may be regarded as a premonitory symptom in this disease *in all its varieties, it is* SORE THROAT." All writers on the disease concur in this.

Of "the symptoms of the first species of the fever," he says:—

"A great, surprising, and sudden loss of strength is a constant and prominent symptom; a cold surface also presents itself, sometimes accompanied with chills, sometimes not. The extremities in the cold stage appear of a purplish or livid colour. Violent pains in the head and many times in the limbs, are among the first symptoms; sometimes one, at other times the other, is first attacked. When the pain commences in the limb it soon mounts to the head. Distress about the præcordia violent and extreme, also universal agony of the whole system, and numbness of the extremities, are often added to the above list of symptoms. The breathing is often laborious and attended with frequent sighing. Syncope sometimes occurs. The pulse in this and all the varieties and stages of this complaint, is soft, weak, and never hard, although sometimes as slow and even slower than in health; it is often intermitting or totally absent, even in cases in which the patient has afterwards recovered. The tongue is generally covered with a white coat; but in some bilious cases it is of a brownish hue, some-

times it has been observed to have a bloodless appearance, which has been considered as almost a certain token of approaching death. * * * * There is loss of appetite, sickness of stomach, and vomiting. The worst form this disease ever assumes, particularly in children, is that of coma or cholera-morbus. It frequently assumes the form of a violent mania at the time or within a few hours of the attack, particularly in sanguine young men. Sometimes delirium is among the first symptoms; sometimes coma; and many times petechiæ. This symptom does not occur so often as the name which the disease has obtained would lead us to expect; these vary in size and in colour, from a bright red to a dark purple."

"Unless the patient recovers he commonly dies within the first twelve, twenty-four, or forty-eight hours. Death is ushered in by the gradual giving up of the powers of life, by syncope, by febrile apoplexy, or by convulsions. In those who do recover the disorder puts on, either before or soon after the expiration of the first forty-eight hours the form of a second variety of this disease; or, to express myself in the words of others, 'runs into a mild typhus of uncertain duration.'"

Of the petechial or purple spots or vibices, he observes that they "commonly appeared on the face, neck, extremities, and frequently over the whole body. They were generally observed in the early stages of the disease. In size they were various, commonly the head of a pin and a six cent bit would mark the two extremes. These spots were evidently formed by extravasated blood: they did not rise above the surface and would not recede upon pressure. In colour they varied from a common to a very dark purple, and the darker the shade the more fatal the prognosis." He also describes a milder form of the disease likewise ushered in by chills, but soon followed by a warm surface. This he calls the "second species of the fever," and says it resembles "a mild typhus or the fever attendant on scarlatina; no petechia, but a red fiery eruption, or what is perhaps more common, no eruption at all; pain in the head and limbs is less severe; less universal agony of the system; loss of appetite, nausea, but seldom vomiting or purging; no coma; no delirium; * * * slight sore throat. * * * This species or variety resembles the scarlatina. * * * The red fiery eruptions may generally be regarded when they do occur as designating the second variety of this disease."

There is still another *species* of this disease which our author speaks of as combining the more unusual symptoms of the fever:—

"These are a dilatation and in some instances a contraction of the pupils of the eyes; redness and suffusion of the eyes; blindness in some, in others double or triple vision; a drawing back of the head with a kind of clonic spasm of the muscles of the neck; aphthæ in the throat; an inflammation like erysipelas upon the limbs; swelling like rheumatism of the joints; paralysis of an arm or a leg, or both; carbuncles and buboes; strangury, and to such a degree as to require the use of the catheter; a violent pain in a finger or toe; hysteric symptoms; pain like colic in the bowels; a slight cough; œdematous and shining appearance of the skin; transitory and evanescent flushes of heat; erratic pains flying from part to part; a deadly feeling of the stomach; a corpse-like rigidity of the limbs, hemorrhages, &c. &c." Such are some of its features as detailed by North.

All authors agree that the cases which terminate fatally are apt to do so within forty-eight hours from the invasion of the disease. This is gener-

ally estimated from the time of the initial chill—the premonitory sore throat not being reckoned in this calculation. Most generally perhaps they terminate within twelve or twenty-four hours—often in a much shorter time, and occasionally in from two to six hours.

The disease seems to have no uniform, settled or definite course to run in cases of recovery. Convalescence may commence in from one to five days or may be prolonged to as many weeks, subject to repeated relapses.

Unlike most other diseases, no one symptom seems to be essential to the diagnosis, except *sore throat*, which, as a *premonitory* symptom, may be considered as unvarying, but yet, often so slight as not to be spoken of by the patient unless he is particularly questioned concerning it. Notwithstanding the non-essentiality of any one symptom of the disease, I have yet never met with a malady whose general physiognomy was more striking, or in which the physician would more readily make up a correct diagnosis after he is once familiar with it. And although when he encounters it for the first time he may not be able to assign to it the name by which it is commonly known, he will yet in most instances readily acknowledge he has never seen any condition for which he would be likely to mistake it. And whilst it is variable in its character and some of the prominent symptoms sometimes wanting, yet the congregation of phenomena is so striking that one or two, or three, of any of the symptoms may be absent in a particular case and yet the disease retain a most marked individuality and be easily recognized by one familiar with it.

In all the places where we have had any account of the existence of spotted fever, it has generally made its advent about the breaking up of the frosts of winter, or in the early spring months. Sometimes sporadic cases have appeared as early as January, but it has not often assumed an epidemic form until about the close of winter. In a few instances sporadic cases of the disease have occurred which were not followed by an epidemic. It is said to make its attack in stormy, rainy, or damp weather. By some it is said to follow in the trains of armies, and in this way to have spread over Europe during the last century, and in Germany was called the "war fever," or the "war plague," but I have no doubt the fever here alluded to, as in many other instances, was the *typhus petechialis*. Children and young persons are most liable to its attacks, and females more than males, yet no age or sex is exempt from it.

All agree that it is not contagious—on this point I have not seen any difference of opinion.

Some objection has been made to the name *spotted fever*, which has been given to this disease, but I see no reason to quarrel with those who first described it under this head. When it is possible to do so, of course, it is more intelligible to give that name to a disease which is most suggestive of the morbid changes induced by it, or one which denotes a constant and prominent symptom, but there is no constant and unvarying symptom in

the disease in question, which does not belong to some of those with which it has been confounded; and our knowledge of its pathology is so imperfect, that I doubt if we could improve its nomenclature even at the present day.

I have no doubt that spotted fever has been treated of under many different names, and confounded with many different diseases—such as typhus, typhoid, jail, putrid, camp, hospital, scarlet, and congestive fever; besides rheumatism, cholera-morbus, apoplexy, phrenitis, cerebro-spinal-meningitis, acute hydrocephalus internus, and typhoid pneumonia. To many of which it bears a resemblance in the exaggeration of some of its prominent and varied symptoms, whilst to others no farther analogy than the presence of a hemorrhagic tendency, or the appearance at some of its stages of purple or petechial spots would indicate.

Judging from the perfect silence with which most of our standard authors on the practice of medicine have treated this disease, and the confusion which seems to exist in the minds of some of those who have alluded to it, it really seems that there has been an absence of information on the subject, mostly, perhaps, growing out of the fact that so many other diseases have been treated of under the same name.

That there is a distinct disease commonly known as *spotted fever, sui-generis* in its nature, and better entitled to this than any other appellation, no one can watch its progress in well-marked cases and study its history without being fully convinced. Yet it is so multifarious in its symptoms, bringing in its train so many of the malignant phenomena which sometimes attend other diseases, and still so rare in its visitations, that it is not strange when it does occur that it should often be misnamed and confounded with and treated of under the names of other and distinct diseases, which to the eyes of the beholder, who is perhaps a stranger to it, it seems most closely to resemble.

I have said it is sometimes confounded with typhus and typhoid fever, to which the milder forms of it have some resemblance, especially in its low grade of action, in its hemorrhagic tendency, petechial eruptions or purple spots, and perhaps in some other respects. Yet it differs much in its violent invasion and progress, in its short duration in fatal cases, in its agonizing pains, in its early numbness or paralysis, and in many other essential particulars. On this head Dr. Elisha Bartlett, who is probably the best authority on this continent on the subject of typhus and typhoid fever, and who evidently thinks spotted fever is not of this character, says in his work on fever:—

"It is not easy at the present day, upon such evidence as we possess, to decide with any confidence upon the precise character of the spotted fever of New England. Without going any farther into the consideration of this question here, I will merely observe, that an examination of most of the records that have been left us of this disease has induced me to believe that

it belongs to that class of *new* and more or less temporary epidemics, each having its peculiar character, and marked by its peculiar phenomena, and depending upon new and peculiar combinations of unknown morbific influences—which have always from time to time made their appearance, rather than to the class of established and permanent maladies."

It is evident that Dr. Bartlett thought it a new disease having a pathology distinct and peculiar, though perhaps not well understood; entitled to the name which it bears, and should not be confounded with any of our "established and permanent maladies," many of which it resembles in some particulars.

Whilst to those who are entirely ignorant of its character and history it may sometimes be disguised under its resemblance to hysteria, scarlatina, congestive fever, acute hydrocephalus internus, phrenitis, colic, and typhoid pneumonia, yet it is so evident it should not be confounded with any of these that I will not attempt to draw the distinction between them. I am sure no one who ever meets with a well-marked case of spotted fever, after he has been made familiar with its history, will ever mistake it for any of these. Whilst in the intense pain and soreness of a joint or a limb it closely resembles acute rheumatism, the analogy stops there, and the extreme prostration, the peculiar and varying pulse, the nausea and vomiting, the deranged breathing and vision, the cold or mottled surface, the purple spots in many instances, the syncope and paralysis—all or a portion of these symptoms, with often others added scarcely less striking, will soon convince the physician that he is not dealing with a simple case of rheumatism. Cerebro-spinal meningitis has occasionally been confounded with spotted fever, and in extreme and unusual cases of the former there is doubtless sometimes a striking similitude between the phenomena which attend the two diseases. We will not think this very strange, however, when we remember that both these diseases probably hold their seats in the cerebro-spinal system of nerves. Cerebro-spinal meningitis has in the general a history and pathology of its own, which though varying somewhat in different localities and in different epidemics is yet sufficiently definite and distinct as to give it a place among our "permanent and established" diseases; and though in extreme malignant and otherwise rare and unusual cases, it may exhibit many of the symptoms which more usually attend spotted fever, yet in the main the diagnosis between the two diseases will not be difficult.

In cerebro-spinal meningitis of an ordinary or usually well-marked character we find this condition presented (I quote from *Watson's Practice, Condie's Notes*, page 328). The picture is not overdrawn, nor yet does it fall short of a correct representation of the disease, without marking any of its extremes:—

"The disease is in general characterized by acute and fixed pain in the head, rachialgia, aversion to light, injection of the conjunctivæ, increased sensibility of the surface, acute cries, low muttering delirium or coma, pain and stiffness of the posterior cervical muscles, with permanent retraction

of the head, often rigidity of the large extensors of the spine, spasmodic tremors or twitchings of the muscles, particularly of the face, and tetanic convulsions of the limbs. When a disease marked by several or all of the above symptoms occurs, especially as an epidemic, we may pretty confidently pronounce it to be cerebro-spinal meningitis."

Compare this description with the one given by Dr. North of spotted fever (before quoted), or that of the committee appointed by the Massachusetts Medical Society, too long for insertion here, or with the symptoms which were observed in the three fatal cases detailed in the beginning of this article, and the difference between the two diseases, as they ordinarily appear, will be at once admitted to be both marked and manifest. The sore throat which seems to be invariable in spotted fever is never present in cerebro-spinal meningitis. In the latter the pain begins in the head, and though not always confined to that point, is yet much more troublesome there and along the course of the spine than at any other portion of the body, whilst in spotted fever the pain frequently begins at some other point than the head, often in a joint of one of the extremities, or the wrist, finger, toe, or stomach. Fits of syncope occur often in spotted fever, never in cerebro-spinal meningitis; intolerance of light and sound, tonic rigidity of the muscles of the back and neck, as in opisthotonos, are almost constant symptoms in cerebro-spinal meningitis, whilst they are of rare occurrence in spotted fever; petechial or purple spots in spotted fever, though not considered pathognomonic, are present in a greater or less number of the cases in all the epidemics I have read of, and in fatal cases they are rarely absent, whilst in cerebro-spinal meningitis, even in those cases which prove fatal, their presence is the exception to the general rule, whilst in most of the epidemics which I have read of, they did not appear in any case, at any stage of the disease. In this place, where the disease has prevailed to a considerable extent on more than one occasion, I never saw petechial or purple spots in any instance, and Dr. Ames, in all the cases reported by him, speaks of purple spots in one single instance only. Purple spots in spotted fever not unfrequently make their appearance twenty-four or thirty-six hours before any other morbid manifestation is observed, as is shown in the first case detailed in this paper as well as by the published accounts of the disease—in cerebro-spinal meningitis, never. Death, when it takes place in cerebro-spinal meningitis, usually occurs in four or five days—in spotted fever it rarely takes place after forty-eight hours, and generally within twenty-four hours; cerebro-spinal meningitis generally attacks the male sex, and in large epidemics it is said not to have attacked a female—in Ireland during a large epidemic "boys were exclusively attacked." In Texas there was not a single instance of a female having it, and in France it was confined "for the most part to the young conscripts." In spotted fever females are most often attacked, and generally those of a delicate and nervous constitution. The six cases spoken of

as having occurred in this place were all females. Another fact which may serve to establish an essential difference between the two diseases may be observed in the effect which remedies have been found to exert over them. In cerebro-spinal meningitis the remedial agents most popular and generally relied upon are evacuants and antiphlogistics, such as cupping, leeching, and general bloodletting, tartar-emetic, mercurials, active purgatives, and other depletants. I am aware that this mode of treatment is not universally approved, but still it is probably the one most generally adopted, and is said by many to exert a most happy influence over the disease, whilst in spotted fever they not only afford no relief but are supposed by many to be absolutely mischievous, often speedily hastening a fatal termination with the greatest certainty. On the other hand, heating external applications, with stimulating drinks, as wine, brandy, camphor and opium are not only tolerated in what would be considered heroic and unjustifiable doses in other diseases, but are positively curative in their effects.

The prognosis of spotted fever is not generally difficult. The symptoms which indicate the greatest malignity of the disease are a long and severe chill, with surface remaining cold and mottled, or difficult reaction, and if established at all of short duration, or in inverse ratio to the chill; the early appearance of petechiæ—the darker the more fatal their indication; a bloodless, shrivelled, and par-boiled appearance of the tongue, mouth, and throat; troublesome nausea and vomiting with eructations of gas; cholera-morbus; numbness, paralysis; rigidity of limbs with agonizing pains in the extremities, head, and stomach; great prostration; difficult deglutition; double or triple vision or blindness; fits of syncope and convulsions or coma. When all or many of these symptoms are present the case may be considered as hopeless. Authors say, however, that recovery does take place sometimes when many of these usually fatal symptoms occur, and that patients are occasionally "restored to life and health after they have apparently met the cold embraces of death," though I apprehend that instances of the kind are very rare.

When the chill is of short duration, or if reaction is complete with a hot skin, a free perspiration, and full pulse; when the tongue is of a natural colour; if there is no nausea or vomiting, or if this has been overcome, and appropriate remedies can be retained; if the prostration of strength is not extreme, and there is delirium instead of coma, the probability is that convalescence will commence in from twenty-four to sixty hours, and end in the recovery of the patient in a few days, or if the disease continues, it will assume the form of a "mild typhus of uncertain duration," and after an indefinite number of days or weeks, terminate in recovery. When petechiæ exist in cases which recover they are apt to result in troublesome ulcerations or sores.

As to the cause of spotted fever we know but little. That it is not contagious all agree. Many suggestions have been hazarded but nothing

satisfactory. It is most probably a *blood poison*, which owes its origin to some atmospheric or planetary changes or influences which we do not as yet comprehend.

The records which have been left us in relation to the post-mortem lesions of spotted fever point to the brain as their principal seat, though they are few and unsatisfactory in relation to the nature of these lesions. After witnessing its phenomena during life it would require the most numerous, best authenticated, and most overwhelming array of post-mortem evidences to convince me that a disease so essentially asthenic in its outward manifestations, could leave post-mortem lesions of an inflammatory character.

The pathology of spotted fever is not well understood. What the peculiar morbific influence is which is at work upon the great nervous centres of the brain and spine we do not know. The profound coma, the deranged circulation, the intense nervous pains in the joints and muscles; the numbness, paralysis, blindness, spasms, and convulsions; the deranged sensations; the delirium, mania, and hysterical symptoms; the distressed breathing without organic changes in the lungs; the nausea, vomiting, and purging without the presence of any offensive matter or traces of any morbid lesions in the alimentary canal, all conspire to show that some powerful and deadly poison is at work upon these great centres. That it is not an inflammation, we have good reason to believe, but in what way it produces these peculiar phenomena is as yet but conjecture. Like cholera, and other rare and fatal epidemics which make only occasional and transient visitations among us, though we have watched their progress, and recorded their phenomena, and perhaps arrived at a conclusion more or less just concerning their treatment, we are yet, in the present state of our knowledge, not permitted to know their essential nature, or to comprehend the laws which regulate their appearance.

In relation to the treatment of spotted fever we perhaps know more than we do of the causes which work its production or the influences which regulate its morbid action. In many places where it prevailed during the years alluded to, it was marked by a fearful mortality, and was looked upon with but little less dread than the plague—killing half and sometimes more than half of those attacked. But if we may believe the published accounts which we have of it, it was afterwards regarded by many as a very manageable disease, and much more amenable to treatment than was at first supposed.

The most approved plan of treatment, and I have no doubt the most successful and appropriate one is the avoidance in the early stages of the disease of all remedies known as evacuants, depletants, and antiphlogistics, and the substitution in their stead of remedial agents of an entirely opposite nature, such as hot and sweating external applications, sinapisms, blisters, hot fomentations, bottles of hot water or hot stones, or blocks of wood boiled in hot water, or hot steam conveyed under the bedclothes,

together with the internal use of stimulating teas, wine, brandy, camphor, bark, opium and the like. Everything in fact which is calculated to determine to the surface, or produce and maintain an increased vigor in the arterial and capillary system. There seems to be a wonderful degree of tolerance for stimulants and opiates by patients suffering with this disease. Two bottles of Madeira or Port wine have very frequently been given within twenty-four hours, and sometimes that quantity in twelve hours, besides other stimulating and heating remedies, and with good effect. One physician tells us he has given as much as a half gallon of brandy with one bottle of wine and 240 drops of laudanum, besides other stimulating remedies within twenty-four hours, in a case "severely attacked with universal pains, totally deranged, very cold, eyes red and suffused, livid spots in various parts of the body, and deglutition difficult. * * * * Symptoms very much resembling hydrophobia," at the end of which time his patient "could see well, had his vision perfectly restored, was easy, and not the least symptom of intoxication any more than he would have had if he had drank nothing but cold water."

Drs. Haskell, Spooner, and Holmes, in their account of spotted fever, say:—

"To what extent the most powerful of these diffusible stimuli may be safely and necessarily employed the following facts will show: A young woman, aged about 20 years, who recovered from the disease, being violently attacked, and a high delirium with great distress supervening, took more than a quart of brandy, and not less than twenty grains of good Turkey opium in less than twelve hours, and before any material mitigation of her disease could be obtained, and what is truly wonderful without the least appearance of intoxication. Indeed, we have been obliged frequently to administer ten grains of opium for a dose in some of the most violent cases, * * * * and have never known it to produce stupor in a single instance."

There are many other instances on record corroborative of these facts. In one case of recovery of this disease in the treatment of which I assisted, but which for private reasons I have not detailed here, stimulants and opiates were borne to a most surprising extent with marked benefit to the disease and without giving rise to the ordinary intoxicating or otherwise unpleasant effects of these remedies.

I have ever been opposed to heroic remedies, or inordinate doses of medicine, and in most diseases look for my greatest assistance in bringing about a cure to the "*vis medicatrix naturæ*," but it seems to me if there is a disease in which not only prompt and active but even heroic medication is justifiable, it is in the one under consideration. True, my experience with it is limited, but yet it has been sufficient to satisfy me that I have never met with a disease in which the use of stimulants and opiates was tolerated to the same extent.

Of course all patients will not bear such quantities of stimulants and

opiates as are indicated above, and indeed I am persuaded that the cases are very few, even in this disease, in the treatment of which such heroic dosing should be imitated, or would even be justifiable. In all cases these remedies should be gradually withdrawn as soon as the urgent symptoms have been relieved.

In relation also to the external or sweating remedies, it is advised by all not to push them after the functions of the skin have been fully established, and attended with sufficient warmth and a good degree of arterial reaction.

As regards also the administration of cathartics, this is not only admissible but beneficial after the first stage or the stage of congestion and prostration has passed off.

I have not attempted more than a general outline of the plan of treatment which is thought most appropriate and successful in this disease, without reference to the special application of particular remedies, or such as are regarded as of secondary or subordinate value.

Believing that I have had not only opportunities but incentives to investigate this disease not known or felt by most practitioners, I thought proper to give not only my own crude observations and reflections in regard to it, but something of what is known and taught of it by others. I am aware that the sketch is very imperfect, but it is as full as the limited time at my disposal would allow me to make it. Should the disease prevail here in any other than a sporadic form, which at this time does not seem probable, I may take occasion to allude to the subject hereafter.

ART. II.—*Entero-colitis, or Chronic Diarrhœa. With some Practical Observations upon its Nature and Treatment.* By W. KEMPSTER, M.D., of Syracuse, N. Y.

THE dividing line between acute diarrhœa and dysentery is as clearly defined and as readily recognized as it is between most diseases of different natures and presenting different degrees of intensity, although affecting the same tissue.

But the name chronic diarrhœa is usually bestowed upon a long-continued flux from the bowels, even after the discharges have lost their feculent appearance and have become dysenteric in their character.

Some confusion has arisen from this application of the same nosological term to apparently different conditions of the structure affected, and not a little fault has been found with this seemingly loose and inaccurate nomenclature by those technical gentlemen who must be "critical or nothing."

It is the object of the writer to reconcile, if possible, the seeming differ-

ences existing between some members of the profession upon this subject, by a few observations upon a complaint which has heretofore been known as chronic diarrhœa, or chronic dysentery, but which is now known, particularly among medical men who have served in our armies, as chronic camp diarrhœa, and which I shall discuss under the more scientific and preferable title of *Entero-colitis*.

This disease, although usually contracted in the army, clings to the patient after his return to civil life with remarkable pertinacity, and he is long after subject to similar attacks. It is hoped that these remarks, based upon a somewhat extensive experience, may prove useful to those who have not enjoyed the benefit of an army practice, but who are witnessing occasional outbreaks of this complaint.

A combination of causes probably tends to produce this disease, and among the most prominent may be mentioned crowding men together in transports, barracks, or in camp, especially if proper precaution be not used to dispose of the excrementitious material and noxious vapours arising from decomposing animal and vegetable matter; a scorbutic taint, induced by the withdrawal of vegetables and fresh meat; the use of impure water containing decaying vegetable organisms; badly cooked and improperly masticated food; last, but by no means least, exposure to the hot sun, and lying upon the ground during the night, which in the South is frequently cold. The season of the year in which it commonly manifests itself is during the early summer and in the autumn, at a period, too, when the paludal fevers prevail extensively. These two classes of disease frequently coexist in malarial regions. This fact has led to extended inquiry: whether the same miasm that produces intermittent and remittent fevers would not, under some varying circumstances or conditions, which we cannot fully explain, produce bowel affections. To this inquiry I am strongly inclined to give an affirmative answer. The English surgeons connected with the armies in India have observed that dysentery (entero-colitis) prevails in the inverse ratio of the intensity of paludal fevers; the same observation has been remarked upon by many of the surgeons of our armies. Among our southern troops, especially those stationed about the bayou districts of Louisiana, intermittent fever was a fatal complication, this disease developing itself rapidly and with great intensity when the patient was convalescing from diarrhœa, and frequently causing death when the medical attendant least expected it. It was observed, too, in these sections that an attack of intermittent fever exempted the soldier from diarrhœa, and *vice versa*, although, as remarked above, either disease might complicate the other.

The exciting cause can generally be traced to some irregularity in eating and drinking, combined with exhaustion consequent upon a long or forced march in the hot sun. The writer has frequently observed this result, particularly when the men were compelled to omit an accustomed meal.

In the hospital to which I was attached during the last two years of the war, it was remarked that a large number of diarrhœa cases occurred among the full diet patients every Monday. This was accounted for by the fact that Sunday's dinner consisted of roast pork and beans. I believe that the bean ration had much to do with producing diarrhœa in our armies. The beans were not always prepared *secundum artem*, and being swallowed half cooked and half masticated, operated very much like a brisk cathartic, thus opening the way which exposes the patient, already prepared by malarial poison, to the long tedious disease which so often follows.

Those men who went from the North to the extreme South were occasionally troubled with a painless, bloody diarrhœa, which did not incommode them much; they became more easily acclimated, and had none of the fever usual to those who visit the far South for the first time; those who did not have this form of diarrhœa were troubled, more or less, with the exacerbating fevers. It may be supposed that this diarrhœa was one of Nature's efforts to remove the extra amount of carbonaceous material which had been accumulated in the camps near home previous to their departure, and where they were fed with a large amount of fat meat and other food abounding in carbon. If carbon, in some form, be a cause of intermittents, as some have argued, we certainly have a partial explanation of the fact that when diarrhœa attacks the individual he is exempt from intermittent or paludal fevers, by reason of the extra amount of carbon being eliminated during the course of the disease. This form of diarrhœa would sometimes recur when the soldier remained for a length of time in camp, eating largely of the carbonaceous elements of food, and which frequently ceased after the march was resumed.

The attack may commence insidiously, or openly, and at once, the patient taking no notice of the first few evacuations, or indeed remaining indifferent until the diarrhœa assumes grave symptoms and is exceedingly difficult to control, the popular idea being that a "clearing out" will do them good. But the disease may continue notwithstanding it is seen from the first, bidding defiance to all our remedies, and hurrying the patient to the grave. Undoubtedly, however, many cases might have been saved had timely measures been taken to stay its ravages. The first symptom which the patient notices is a very free evacuation unaccompanied by pain; this is soon followed by others with some griping, succeeded by tormina and tenesmus, which increase in intensity until the patient feels inclined to remain continually at stool as the only means of obtaining partial relief. The initiatory discharges are generally free from mucus or blood; afterwards the evacuations contain, or are wholly composed of, frothy mucus tinged with blood. The system now becomes affected, the patient feels tired, and by spells chilly and feverish; there is loss of appetite, thirst, and a clammy mouth; the tongue is covered with a thin whitish coat; the pulse is feeble and rapid; there is pain in the lumbar region, and a

sensation of heat throughout the intestines and in the bladder; a desire to urinate with inability to fully accomplish the act. There may be vertigo and slight nausea, but rarely any vomiting. These symptoms continue from three to five or six days. If the disease be not checked, the pulse then becomes fuller and less rapid, the discharges not quite so frequent, the vertigo disappears, the appetite is better, and the patient is apt to flatter himself into the belief that he is rapidly recovering. The characteristic evacuations, however, recur frequently until the malady assumes the chronic form, and continues with variable degrees of intensity, gradually but certainly reducing the strength and vigour of the patient, undermining his constitution, unfitting him for his duties, until, by some excessive fatigue or unusual exposure, he is compelled to seek his bed. During the first days of the attack, the dejections have more of a dysenteric character, which leaves them as the disease becomes chronic. The length of time which a patient may be able to remain in active service varies from one to six or even twelve months, according to the location and surrounding circumstances, before he is compelled to give up. It usually takes on the dysenteric form, which, unless checked, will prove rapidly fatal; or the pernicious or congestive fever may attack the patient, who, in either of these events, is unable to withstand for any length of time the shock of so serious a disease.

There is, during the continuance of entero-colitis, a great variation in the appearance and consistency of the alvine discharges; at times they may appear of normal colour, but much thinner than usual; again they may be of a buff colour mixed with a glairy or frothy mucus, or tinged with blood; or they may appear of a natural consistency, but almost or entirely white, not unlike the dried dung of dogs; or, again, they may be watery, feculent, and of an exceedingly offensive putrid odour. The digestive functions are impaired, so that it is not unusual to see particles of undigested food in the feces. These appearances are most frequently observed in camp. In the hospital, the cases are of a more aggravated nature. On admission the patient is emaciated and debilitated, homesick, and not unfrequently sick of life; he has a cadaveric appearance; the eye presents a peculiar, unusual brightness or lustre, with a contracted pupil; the body exhales a pungent, sickening odour, and the skin is dry and furfuraceous. The pulse is thready and rapid, the tongue has a thick brown coat, with sometimes a furrow running through the middle its entire length, or again it may be dry and red, with protruding papillæ.

The intellect is not unusually impaired; the patients will whine and cry without any pretext whatever; they are dull of apprehension, often answering questions slowly and incoherently; they sometimes become stupefied and almost comatose, in which case the evacuations are involuntary. When this last symptom appears it has, in my experience, been a sure precurser

of death, notwithstanding the patient may rally from his comatose condition.

In the diarrhœa which our prisoners of war contracted in the southern "pens," and which partook eminently of the scorbutic diathesis, the symptoms were aggravated in an extreme degree. The long-continued drain upon the system impaired the mental faculties, as well as those of the body, reducing the unfortunate victim to a state bordering upon idiocy, besides ruining the constitutions of our best and bravest, sowing the seeds which, in a few years at farthest, will ripen into phthisis and its kindred disorders, unfitting them for the duties of life, and dragging them to early graves.

Much has been added to our existing knowledge of the pathology of this disease. The distinguishing pathological features of diarrhœa and dysentery, as observed in the standard works, are in the one (diarrhœa) a congested or inflamed condition of the small intestine, usually confined to the ileum; in the other (dysentery), the principal feature is congestion, inflammation, or ulceration of the colon. In the disease under consideration, we have both the small and large intestines taking on this abnormal action, these parts being found more or less diseased in proportion to the symptoms which were apparent during life, being more or less grave, ranging all the way from simple congestion to ulceration and perforation of the bowel. The colon was observed to be more extensively diseased than the ileum. In very severe cases, or after diarrhœa has continued for a long time and dysenteric symptoms supervene, which cause death, we find, on examination, a more or less ulcerated condition of the colon, according to the severity of the previous symptoms, and, lining the tube, a yellowish or brown exudation or false membrane, which can be detached in shreds. This membrane, on examination under the microscope, is found to be "composed of round lymph or pus-cells, held together by an adhesive granular matrix, more or less resembling coagulated fibrin."[1] It is thought that this membrane is made up of epithelial cells of the diseased mucous membrane. In the milder forms, or where the patient has fallen a victim to some complication or injury, we find the colon congested and thickened, while the lower portion of the ileum is inflamed; the solitary glands are somewhat enlarged and of a dirty white or grayish appearance. Peyer's patches presented an inflamed condition, but there were no ulcers. In those cases which had continued for four or five months, the colon, besides being thickened and inflamed, presented in one portion an ulcerated sloughy condition, with here and there dark ecchymosed patches, which, on being cut into, exude a black grumous pigment matter, like partially coagulated blood. On rupturing the enlarged follicles of the ileum, a cheesy substance could be squeezed out, not unlike that seen in encysted tumours. It is quite usual to find the glands of the mesentery much enlarged and containing

[1] Circular No. 6, S. G. O. p. 124.

a similar material to that found in the follicle before it ruptures, a condition which impairs the nutritive functions, and subjects the individual to slow starvation. In these cases the lungs are frequently found crowded with soft tubercle, although no pneumonic difficulty may be suspected during life. In the worst forms of the disease, or in those persons who were attacked with dysenteric symptoms, ulceration existed in a greater or less degree, according to the length of time the patient had borne up under the attack. In many instances the colon was found extensively ulcerated, the ulcers occurring near each other, sometimes communicating beneath the mucous coat. In all these severe forms the colon presented an unusually dark appearance, and was much softened, in some instances so much so that it would tear asunder by its own weight.

The process of ulceration usually destroys the submucous tissues for a short distance under the edge of the ulcers (which are well defined), allowing the mucous coat to drop upon the muscular, which is not infrequently found extensively injured or entirely destroyed, leaving only the peritoneal coat to prevent the escape of the contents of the intestine.

It was in these cases that the false membrane was observed, often extending not only throughout the small intestine but the larger, which was also found extensively diseased; in one case, in particular, every portion of the alimentary canal, from mouth to anus, was in an inflamed condition, and the ileum ulcerated, the patient presenting no marked febrile symptoms during his illness. In a specimen ten inches in length, taken from the colon of this man at the commencement of the descending portion, there are fifty ulcers, all clearly defined. The immediate cause of death was peritonitis induced by perforation of the colon. In preparing the specimen, it was found that other perforations of the bowel had occurred, but adhesions had been formed to the walls of the abdominal cavity, thus preventing the escape of the intestinal contents. Ulcers were found in various stages of healing, some quite healed. The entire intestinal tube was lined with a yellow and black membrane which could with ease be separated from the mucous coat.

It is now quite generally believed, by those who have given attention to the pathology of this disease, that the origin of the ulcer is in the accumulation of cellular substance (the cheesy material mentioned above) within the follicle, until the walls of it are overcome, and the contents escape; that during this accumulation of the cellular elements in the follicle a passive congestion occurs which tends to soften the mucous coat in its vicinity; and that after the escape of this material, a small ulcer exists, which takes on a sloughing condition which is in part regulated by the softening and breaking down of the adjacent membrane. It can readily be conceived that after an ulcer is once established it does not require the continued action of its cause to maintain the ulcerative process; the action of the contents of the bowel, which are constantly passing over the ulcer,

and which must necessarily be irritating in their nature, together with the peristaltic movement and passive congestion, all tend to keep up or augment the lesion established.

What this material is which fills and ruptures the follicle, and whence it is derived, are questions upon which much discussion has been had. I am inclined to the opinion set forth by Virchow, who holds that it is entirely composed of cells derived from and multiplied within the walls of the follicle in the usual way; that the formation of cells is consequent upon an increased flow of blood to the part, which flux has been produced by some local or perhaps constitutional irritation, dependent upon unwholesome ingestion or some dyscrasia of the blood, whether scorbutic or malarial, or both combined. The diathesis is then ready to operate whenever the opportunity offers. The ulcer spreads in the usual way, by breaking down the contiguous structure, which passes off with the contents of the bowel, and which can sometimes be seen in the fecal discharges. Pus detected in the evacuations would, of course, confirm a suspicion that ulceration existed, although its absence would not prove the contrary. Dr. Salisbury claims to have seen torula cells in the discharges, indicating a fermentative process, which must add to the existing irritation, and would seem to call for a system of medication which will destroy this action.

Of the other abdominal viscera, the kidney presents the most marked alteration; and it is confidently asserted that a prognosis may be aided by an examination of the urine. If it contains albumen and tubular casts early in the disease, death usually ensues, when the renal organs are found highly congested and the uriniferous tubules loaded with detrition. Hepatic or splenic complications are uncommon.

In the *treatment* of this disease we must be guided in great measure by its cause, its duration, and the number of times the patient has been attacked; the season, the atmospheric and telluric influences by which he is surrounded, and, in army practice, whether he is in the field or hospital. Commencing with the simplest form, or that produced by eating irritating ingesta, I have invariably been able to cut it short, when seen within forty-eight hours from the first symptom, with ol. ricini ℥j, tr. opii, ext. zing. rhad., āā ℥ss at one dose. I have not found that the diarrhœa would cease after allowing the bowel to clear itself of the offending material without medicinal aid, but on the contrary a disposition to continue was manifested and which would ultimately require a decided course of treatment to check. After the disease has continued for several days, which is most likely to have been the case when we first see the patient, the tr. opii, in doses of from half a drachm to one drachm, repeated every five or six hours, has in my hands proved very beneficial. In the form of diarrhœa resulting from an excess of carbonaceous food, the supply must be entirely cut off, and the patient limited to a light vegetable diet, until the system has become rid of its excess, which will announce itself by some griping and tenesmus,

with a feeling of lassitude. The discharges should now be stopped with the mixture already mentioned. Ripe fruits are excellent for food and medicine in this form of the disease, and under this pleasant mode of treatment it is not unusual for the disorder to correct itself after depletion has been carried far enough.

This variety is by no means allied to the scorbutic taint; it was chiefly observed among those men who were sent to the extreme South, who had seen no field service, and who had consumed large quantities of animal food previous to their departure from camps near home.

The most troublesome and fatal of all forms of this disorder is that connected with the scorbutic diathesis, and which I believe constituted more than two-thirds of all the cases occurring during the last two years of the war. This cachexia is known to exist when we find spongy gums, bleeding on slight pressure. A not unfrequent symptom is hemeralopia, or night-blindness, which can frequently be traced to a scorbutic origin, and which will aid in the diagnosis. The reopening of old scars and ulcers are other indications which should put the practitioner on his guard. When this state exists, we can very often relieve the diarrhœa by paying no attention to it whatever, giving our patients potatoes or fresh vegetables, or fruits of any kind (except water melons) instead of pills. In other words, by directing our attention to the scorbutic condition, the diarrhœa will usually yield at once.

During the green corn season, and especially after the order issued from the War Department in 1863, permitting troops to take the ears, there was a marked diminution in the number of cases of diarrhœa, and this, too, when the army was engaged in an active campaign. When this cachexia is known to exist, the patients should be placed upon a free vegetable diet using milk to drink. I have seen great disadvantages result, as I believe, from a restricted diet in all cases of entero-colitis. The disease is asthenic, and the system must be supported or the patient will die. I cannot deprecate in too decided a manner the usual corn-starch and farina slops which are so often doled out to this class of cases. They are not prepared properly one time out of three at home even, while in the army they are hardly ever fit to touch. Oysters, eggs, chicken and mutton broths, and beef essences, all well seasoned, are usually relished. When we have reason to believe that the intestine is ulcerated, concentrated nourishment should be given in order to relieve the bowel from moving a large quantity of excrementitious matter which will excite peristaltic action and aggravate the disease. It occurs to me that Liebig's *extractum carnis* would be a good preparation to use, although I have never given it a trial. The use of fats must be interdicted, also all the coarser articles of food. I am in the habit of allowing my patients to drink plentifully of clear cold water. In connection with the dietetic treatment, I have generally given the mist. vini Gallici, or porter, as the case requires or the taste prefers. Milk punch is more agreeable to many, and should be given.

The medicinal treatment that I have found most beneficial in this form has been a combination of vegetable astringents with the chalk mixture, as follows: ℞.—Mist. cretæ, tr. catechu, āā ℥j; ext. hæmatox. fluid. ʒij. Of this a teaspoonful may be given every four hours. This mixture has been successful in my hands after all other remedies, such as the various preparations of opium, acetate of lead, bismuth, tannin, &c., had failed. A plan of treatment that I have found admirably suited to this and other forms of diarrhœa, is to permit the patient to eat all he desires of the ripe fruit of the *Rubus villosus* and *Rubus trivialis* (blackberry and dewberry). I have yet to learn of its failure in checking the most decided and severe forms of entero-colitis. During the spring and summer of 1863, the writer had an attack of this loathsome disease, which defied all the usual forms of medication. From the time this wholesome fruit ripened until it was entirely gone my difficulty disappeared. Such was the case also with other officers and men who chose to exert themselves in procuring the berry. An infusion of the bark of the root is a favourite remedy, but the fluid extract is a more elegant and reliable preparation. After the disease has become decidedly chronic, or when extensive ulceration is presumed to exist, the treatment varies somewhat, although I am disposed always to give the vegetable astringents a trial, with the understanding, however, that they do not always succeed. This is a disease that cannot be forced, but may be coaxed; after persisting in one plan of treatment for a time, if unsuccessful, some other must be substituted. The course so usually recommended by our standard authorities (I refer to the opium and acetate of lead), and which has been so persistently used by some, in my observation and experience is an utter failure. One of the most unsuccessful men in the treatment of this disease that I have ever met with, could not be induced to believe that there was any other rational mode of treating this class of patients. Our old "sheet anchor," opium, is here unreliable and very often useless. Bismuth, in two scruple doses and under, I have seen fail in so many instances as to give it no place among my remedies for this form of the disorder.

Great benefit has been derived from the use of the mineral acids when judiciously administered. If, after the first few doses have been given, the disease does not show a disposition to yield, the remedy must be stopped at once, or it will do positive harm.

The following formula I have found very efficient, and can earnestly recommend: ℞.—Acid. sulph. arom. ʒiij; tinct. cardamom. comp. ʒij; ext. rhei fluid. ℥iss; aqua, ℥iv.—M. S.—Two tablespoonfuls at once, and continue by giving one tablespoonful every four hours afterwards. If, as above remarked, it does not check the disease at the expiration of twenty-four or thirty-six hours, it must be stopped or it will injure the patient by aggravating the symptoms. Next to the dilute sulphuric, I prefer the aromatic sulphuric acid, and then the nitric; the two former are less liable to pro-

duce irritation than the latter. Under the acid treatment the stools usually lose their clay or white colour and regain their normal appearance, and are tinged with bile; the integument will also lose its furfuraceous appearance and become more natural in its action. Should this preparation fail, I have found the nitrate of silver in the form of pills, from one-half to one grain mixed with bread, and administered every four hours, to be an exceedingly valuable remedy. The tincture of the chloride of iron has been lauded for its efficiency in reducing the frequency of the evacuations, but I have not found it as successful as the measures indicated above.[1]

In the spring of 1865, a combination of Monsel's salt (*ferri persulphas*) with quinia was recommended in the dose of from two to three grains of the former to five or six of the latter, but in the few cases where it was given it appeared to increase the existing irritation, and consequently gave me an unfavourable impression of its efficacy. At times the discharges exacerbate, occurring with greater frequency towards night, in which case quinia should hold a prominent place in the prescription. The following combination has proved satisfactory to me in many cases of this kind: ℞. —Quinia sulph. ʒj; acid. sulph. arom. ʒiss; aqua, ℥iijss.—M. S.—Take a teaspoonful every four hours. Rest in the recumbent posture should be insisted upon. I believe the disease is often prolonged by the restlessness of the patient. Tenesmus is frequently relieved by the injection of cold water after each discharge from the bowels.

Starch and laudanum injections, as a remedy for the disease, are useless; for the lesion is higher in the bowel than they can be thrown. After the disease has been checked, quite likely the patient will have some irregularity of the bowels with borborygmus. This is undoubtedly due to atony of the muscular coat, and will yield readily to the following: ℞.—Quinia, gr. ij; ferri sulph. exsiccat. gr. ij; strychnia sulph. gr. $\frac{1}{20}$ at a dose, repeated three times a day.

I have not observed that stupes, or local applications of any kind, do much good in the treatment; the abdomen should be covered with flannel and kept warm; a cold, damp day will aggravate the disease in any stage. Leeching, or bleeding in any form, is inadmissible. I never saw the least good result from it, although it was often repeated by some of the medical officers attached to the hospital. On the contrary, I believe it does harm, by inducing an adynamic condition which we should endeavour by all means to prevent.

There is one form of treatment yet to be spoken of, and which is one of the utmost importance. I refer to change of climate. There is no other disease in the category which responds sooner or more effectually to such a change than this. When the patient's strength will admit, he should be

[1] [Of all the preparations of iron, we have found the syrup of the protonitrate, in doses of from 25 to 40 drops, three times a day, the most effectual in arresting this disease.—EDITOR.]

removed to some high latitude, away from malarial influences, and if put upon a proper diet he will need but little else done for him. During the late war this fact was acted upon to a considerable extent and with excellent results. Circular No. 6, S. G. O., 1865, gives the percentage of deaths from this disease, in the second year of the war, at various hospitals situated near where our armies were operating, as follows: In the New England general hospitals, one in every forty-nine (48.8). In New York city and State, with the hospital at Newark, N. J., one in every nineteen (18.7); the hospitals in Pennsylvania and Delaware, one to every fifteen cases; in Maryland and the District of Columbia, including Washington, Georgetown, Alexandria, Frederick, Baltimore, Annapolis, etc., one in every eleven cases (11.4); at Fortress Monroe, and on the coast of North and South Carolina, one in every seven cases (7.1). The same law was observed in the percentage of cases in the different latitudes of the west; the greatest rates of mortality, however, not occurring at the point farthest south, but at Cairo, Ill., which is situated upon a peninsula subject to the "most intense malarial influences," and where the mortality reached the enormous figure of one in 3.98, or over 25 per cent., while in Memphis and New Orleans, the percentage was one in 5.4 and 4.7 respectively. Abundant evidence is thus furnished that proper climacteric influences exert a beneficial effect upon the treatment of this disease; and that malarial exhalations tend not only to impede recovery, but to increase mortality.

I am not aware that any statistics have yet been compiled relative to mortality from this cause among our prisoners at Andersonville and other places, but I learn of those who have been incarcerated, that the death rate, as might have been expected, was much larger during those seasons when vegetable decomposition was most rapidly carried on than in any other; and also after a fall of rain, followed by a hot sun. Home exerted a beneficial influence upon those who could avail themselves of its comforts. Many prisoners who came to our hospital in an emaciated condition, but who were able to take advantage of the usual furlough, returned at the expiration of thirty days, ready for the field, while their less fortunate comrades, or those who had not been prisoners, convalesced slowly, and remained weak and sickly for months. The government acted upon this fact, and ordered men who were suffering with this complaint to the hospitals nearest their homes, whence they were furloughed.

One of the most distressing symptoms is nostalgia. Time after time I have seen men droop and waste away, and notwithstanding every effort for their welfare, die, even after the flux had ceased. It occurs to me that every patient presenting this feature fell a victim to the great desire of his existence, which in his particular case could not be gratified. Nostalgia was more particularly manifest in this disease and in typhoid fever, its frequency and prominence being in the order given.

Very much depends upon the care of the patient after the flux has

ceased; we are by no means to regard the patient cured because the frequent painful evacuations are suspended. On the contrary, it is not unusual for them to recur with increased violence after a short intermission. The patient should not be permitted to leave his bed for several days after all indications of the disease have disappeared. The diet, too, must be properly regulated, none of the coarser articles of food should be used, and the patient must be told of the fatal consequences of over-eating. Frequent sponging with the nitro-muriatic acid bath mixture will be refreshing, and will relieve the parched condition of the skin. Constipation sometimes occurs after the disease has been checked; if not dependent upon atony of the muscular coat, a mild dose of ext. rhei fld. with a little ginger or peppermint, or both, will usually do all that is required. Active cathartics must not be given. The tendency to return has already been mentioned; the patient should be told of this, and also that he should take immediate steps to have the first manifestations checked. I have used the acid mixture given above, in cases of recurring diarrhœa with good success; chlorodyne[1] will also be found beneficial.

Complications and Sequelæ.—The liability of intermittent fever to follow convalescence from entero-colitis has been mentioned. It must be arrested at once, or it will destroy the patient; in other words, it must be treated as an attack of congestive fever, by large doses of quinia. By large doses I mean from 20 to 30 or even 40 grains, according to the atmospheric condition and the severity of the symptoms. This dose I have seen repeatedly administered with the effect of saving life. Pneumonia is a complication which I have treated simply by increasing the quantity and changing the quality of the stimulants; giving, in addition to the brandy or whiskey, carb. of ammonia in full doses. I cannot speak with certainty, but I do not think that this complication increases the mortality so much as one would *a priori* expect, unless the person was extremely debilitated before the pneumonic attack occurred. Phthisis occurred in a number of instances, but was usually confined to a class of patients presenting a decidedly scrofulous cachexia. Endeavours were used to mitigate the sufferer's symptoms, but little could be done. It was observed that checking the diarrhœa hastened the end. The post-mortem examination usually revealed a tuberculous deposit in the glands of the mesentery. Diphtheria occurred in five cases, with four deaths, a mortality which illustrates the exhausting nature of the disease under consideration. Subacute bronchitis was a frequent complication, and large quantities of frothy mucus were expectorated without much effort; the cough yielded readily to appropriate remedies. Ascites occurred in a number of instances, and

[1] The following is the formula for the preparation of chlorodyne: R.—Chloroform, ʒiv; æth. sulph. ʒij; theraicæ, ʒj; mucilag. acaciæ, ʒj; morph. muriat. gr. viij; acid. hydrocyanic. dil. ʒij; ol. menth. pip. gtt. iv.—M. The dose is from 5 to 10 drops.

was usually very persistent, the fluid accumulating rapidly and in large quantities. It was observed that it did not appear so frequently after the very severe cases as after those of a milder type. Œdema of the lower extremities also occurred, and both these diseases brought their corresponding amounts of anæmia and debility. Hæmorrhoids followed frequently; they were treated with the cold douche and an unguent of ferri persulphas and simple cerate, ʒj of the former to ℥j of the latter. I found no difficulty in relieving and often curing them by these measures.

But one case of prolapsus ani, after diarrhœa, came under my observation. This was very severe; sometimes three inches of the gut would protrude. It resisted treatment; the cold douche often relieved it, and an unguent composed of tannin, morphia, and simple cerate seemed to procure more ease than any other remedy. It should be mentioned that the person in whom it existed was upwards of 60 years of age, and it had occurred some years previously during an attack of dysentery, but the bowel had returned to its normal condition on his recovery.

Another very troublesome sequel, and of which in books I can find no mention whatever, is a painful sensation situated in the supra-pubic region. It is felt most acutely in the morning, while in a recumbent posture. The pain is sharp, but of short duration, recurring frequently; the bowels are not relaxed, and the evacuations are in all respects normal in character and appearance; the appetite is not impaired, and the functions of digestion are carried on naturally. The only symptom is subjective, and consists of this neuralgic pain. It is much more acute just before a change from a dry to a moist state of the atmosphere, and at these times may cause some looseness of the bowels. Irregularity in eating causes an increase of the one prominent symptom—pain. The writer still suffers from this peculiar manifestation, although nearly three years have passed since the diarrhœa was checked. I am inclined to think that its pathological condition is a latent inflammation of the lower portions of the ileum, with hyperæsthesia; the feces collect during the night, in the colon and lower part of the ileum, thus irritating the congested portion, and causing the pain, which is usually relieved at once by a free discharge from the bowel. This opinion would also seem to be corroborated by the fact, that when the bowel is not relieved of its contents at least once during the twenty-four hours, the pain increases until the evacuation, which will be thin, is obtained. There is no tenderness over any part of the abdomen when the pain is absent; when present, pressure slightly increases it. I suppose atmospheric changes influence it, as they do rheumatism and other disorders involving the nervous system. I employ the treatment found beneficial in my own case, viz., perfect regularity in eating, and perfect regularity concerning the movements of the bowels. The diarrhœa mentioned above usually ceases after two or three movements. When the pain is excessive, it can be controlled with some preparation of opium, although it never

continues for any considerable length of time. In this, as in the primary disease, change of climate may be beneficial; but in my own case this is not obvious; for it continues as severely as when I was in the South. It is well to direct the patient to wear his clothing loosely over the abdomen; a tight waistband aggravating the symptoms.

There is yet another very distressing affection which sometimes occurs as a result of this disease, and to which I cannot give a name. To those who have suffered long from entero-colitis, or have been subjected to prison diet, it is most marked. I allude to a state of the mind which may with propriety be called mental incapacity. In this condition a feebleness of purpose, a want of stability and incoherence are exhibited. This derangement may continue for some time after the primary disease has entirely left the patients. When a question is asked they hesitate several minutes, apparently endeavouring to find language for an answer, which when made is in the fewest words. This was observed particularly, among those men who had been several months in southern prisons, suffering from the effects of entero-colitis, with the scorbutic diathesis. They would sit by the hour, gazing on the ground, paying no attention to what was going on about them. Their movements were slow; they were irritable; nothing would please them. The face wore an expression of complete dementia. The pulse was slow and soft, the pupil dilated, and the eye presented an unusual brightness. They slept very soundly, and for longer periods than a person in health. The appetite was good, and the functions of the body were normally performed. These symptoms were more like those of brain softening in its advanced stage, than any others to which I can compare them. *The brain was starved.*

In the cases examined after death, no pathological condition of the brain or its membranes was found which would account for the ante-mortem state above described.

The treatment consisted in preserving and improving the general health, and giving the patient a nourishing diet, with plenty of fresh air and exercise. Many of the cases improved very much; in fact, all who were afflicted in this way experienced relief to a certain extent; for the mental incapacity was more manifest during the existence of the original disease, than after its cessation. From this state some recovered entirely; others did not while they remained in hospital.

It is difficult to explain the causation of this sequel, unless an insufficient supply of nerve food will account for its occurrence; but were this the cause we should expect to see the symptoms cease, when the blood was restored to its normal quantity and quality, a result which was rarely observed. Nerve tonics exerted no perceptible control over it, and as stated above the only treatment persisted in was the dietetic and hygienic.

In conclusion, I may say that the disease in question is one which must be met decidedly, but with caution; if permitted to continue, it will

assuredly bring trouble to the patient, and perplexity to the practitioner; while at the outset, a few wholesome directions, with an efficient remedy, will check the tendency to mischief, and perhaps save the patient's life. When once it becomes what I have attempted to describe in the preceding pages, I know of nothing so disgusting to the sufferer, or so intractable and trying to the patience and skill of the medical attendant.

ART. III.—*On Typhlitis and Peri-Typhlitis; or, Diseases of the Cæcum and Appendix resulting in Abscess in the Right Iliac Fossa.* By ROBERTS BARTHOLOW, M. D., Lecturer on Clinical Medicine and Physician to St. John's Hospital, Cincinnati, etc. etc.

IT is not my purpose to consider simple inflammation of the cæcum, or that impaction of this organ which, evidenced by pain and swelling in the right iliac region, disappears more or less promptly under appropriate treatment. The special condition, the object of inquiry in this paper, is that disease, either of the cæcum, appendix, or peri-cæcal tissue which ends in the formation of an abscess in the right iliac region.

This disease has been described under various designations, as follows: Typhlitis, Tuphlo-Enteritis, Peri-Typhlitis, Cæcitis, Cæcal Abscess, Lumbar Abscess, Fecal Abscess of Iliac Fossa, etc. These terms are, of course, not synonymous; neither do they accurately express in every case the pathological condition, but rather some pronounced feature in the morbid process. Cases of this disease having, within the past year, occurred under my observation, I have been at some pains to look up the literature of the subject. Although the information is not so meagre as I had supposed before commencing my researches, it is scattered through so many periodicals that it may be useful to collect what is known into a group for more convenient study and analysis.

The best account of the diseases of the cæcum which has been published in our language is unquestionably that of Dr. Copland in his *Dictionary of Pract. Med.* This learned and indefatigable author, as his note on the bibliography and references sufficiently exhibits, neglected no source of information. In Dupuytren's *Leçons Orales de Clinique Chirurgicale faites à l'Hôtel Dieu de Paris*, etc., there is an excellent lecture on abscess in the right iliac fossa, of which Copland and subsequent writers have made liberal use. One of the most valuable monographs on the subject of Typhlitis or "Tuphlo-Enteritis," is that by Dr. John Burne, Physician to Westminster Hospital. His first paper on this disease was read before the Royal Medical and Chirurgical Society on

the 27th of November, 1838, and was published in Vol. XX. of that Society's Transactions. This was followed by another paper on the same subject, the next year. These papers appear not to have received the attention which their merits deserve. For instance, Habershon merely alludes to them in the preface to his work On the Alimentary Canal as "a valuable paper." Previous to the publication of Dr. Burne's paper, Mr. Ferrall had described in the *Edinburgh Journal* several forms of this disease, and in the *Dublin Journal* for March and May, 1839, is an account of the morbid anatomy of a case observed by him. In the *American Cyclopedia of Practical Medicine*, vol. i. p. 80, there is an excellent *résumé* of existing knowledge on the subject of Typhlitis. A very carefully considered article is also to be found in the *Western Lancet*, vol. vii., 1848, by Dr. Hanbury Smith, who refers to a treatise on the subject by Volz, of Carlsruhe, an author whose labours have not attracted the attention of any English writer upon the disease. A short account of the anomalies of position and the diseases of the cæcum and appendix is given in vol. ii. of *Rokitansky's Pathological Anatomy*, but it is by no means a satisfactory treatment of the subject. Also, in *Wilks' Pathological Anatomy*, p. 299, there is a brief statement of observations upon intestinal concretions and abscess of the iliac fossa. In the *London Lancet*, vol. i., 1860, there is a short and incomplete article on tuphlo-enteritis, based upon some cases reported from the London hospitals. No allusion has thus far been made to the elaborate *Handbuch der Speciellen Pathologie und Therapie*, which contains in the volume devoted to diseases of the chylopoietic viscera by Prof. Bamberger, of Wurzburg, a very full chapter on Typhlitis and Peri-Typhlitis (pp. 329–45). The subject is more exhaustively treated by this author than by any other. Prof. Bamberger has not omitted inquiry into the English contributions to the same subject, and has availed himself of the labours of Ferrall, Copland, and Burne.

In general, the references to this subject in the systematic works on medicine are meagre and unsatisfactory. The article in Copland's Dictionary is the most complete. Wood does not enter into the consideration of typhlitis with any degree of particularity, and Aitkin does little more than allude to it. Flint, in his recent excellent work on the Practice of Medicine, has not omitted mention of this disease, and gives in a few sentences much valuable information. Finally, Habershon, in his work On the Alimentary Canal, has devoted a chapter to the cæcum and its diseases. Reports of cases, and observations upon them are quite numerously scattered throughout the medical periodicals of the last thirty years. The most interesting and important of them will be introduced when they may serve to determine a question.

The occurrence of an abscess in the right iliac region, communicating with the bowel, may, for our present purpose, be considered due to, 1,

ulceration and perforation of the cæcum; 2, ulceration and perforation of the appendix; and 3, inflammation and suppuration of the sub-cæcal connective tissue.

I. ULCERATION AND PERFORATION OF THE CÆCUM occurs under two conditions: *a*, the irritation of an extraneous body; *b*, perforating ulcer of the cæcum.

a. Ulceration of the cæcum produced by some extraneous substance is, probably, more frequent than is generally supposed. The anatomical position and structure of the cæcum favours the lodgment of foreign bodies. It has, it will be remembered, a sacculated arrangement, due to the fact that the longitudinal fibres are collected into three bundles, which are much shorter than the mucous membrane. This arrangement permits an extraordinary increase in size when the fecal matters accumulate, but in the state of ordinary distension these sacculi and folds of the mucous membrane may retain particles of undigested food, fruit-stones, intestinal concretions, etc. As the cæcum is bound down more or less closely by the sub-cæcal connective tissue, and by the peritoneum, the motion of this intestine is very limited, and hence foreign bodies lodged in the folds of the mucous membrane are less readily detached than in other parts of the intestinal tract. From similar causes, lodgment of extraneous bodies, followed by ulceration and abscess, may occur in the sigmoid flexure of the colon, an instance of which happened in my wards at St. John's Hospital, last winter. Volz, of Carlsruhe, according to Dr. Hanbury Smith,[1] thinks intestinal concretions, of which he describes three varieties, the "*soft*," the "*semi-hard*," and the "*stony*," play an important part in the production of the ulcerative inflammation. The first "resemble excrement in appearance and odour, and have a nucleus of hardened fecal matter;" the second "have a sausage form, with pointed ends, are of a grayish-brown colour, and consist of shining concrete layers, with a nucleus in the centre, which is not a foreign body;" and the third are "of a grayish-white or earthy colour, and a surface whence may be detached delicate scales, or else of a smooth, shining, yellowish white or brown surface, studded with calcareous projections." Most of these intestinal concretions consist of carbonate and phosphate of lime, united with inspissated mucus. Copland alludes to one consisting of cholesterine. In the museum of Guy's Hospital, says Habershon, there is a large calculus, the size of a hen's egg, which was removed from a sinus leading from the parietes of the abdomen to the cæcum. These intestinal concretions are much less apt to lodge in the cæcum than are such foreign bodies as cherry and grape-seeds, and various indigestible substances of a similar irritant character. In the appendix, however, any substance not acted on by the intestinal juices may lodge, especially if the cæcum be distended with feces.

[1] Western Lancet, 1848, vol. vii. p. 134 et seq.

The foreign body, whatever may be its nature, lodges in the folds of the mucous membrane in the posterior part of the cæcum—for the direction impressed upon the fecal matters in their passage through the ileo-cæcal valve is from before backward. Having obtained foothold, the body excites ulceration of the mucous membrane, perforation takes place, and some fecal matter with the foreign body escapes into the sub-cæcal connective tissue. Inflammation then occurs in this connective tissue (*cellulitis*), manifested by some constitutional disturbance, but especially by tumefaction in the right iliac and lumbar regions, by pain down the inner face of the thigh, by hectic, sweats, discharge of matter, &c.

It is to be observed that, in these cases, the first symptom is due to perforation followed quickly by acute inflammation of the sub-cæcal tissue. Peritonitis is not an accident of this condition of things, for the reason that the portion of the bowel perforated has no peritoneal covering. Symptoms are not observed—or, are very obscure—until the inflammatory process takes place in the sub-cæcal tissue, because, indeed, the ulceration is confined to the limited space occupied by the foreign body, and does not involve loss of function of the organ.

For particulars of two cases of this form of ulceration and perforation of the cæcum, I am indebted to my friend Dr. Geo. Fries, of this city, whose good fortune in meeting with strange and difficult cases is only equalled by his skill in the management of them.

CASE I. When this young man presented himself to Dr. Fries, the whole anterior wall of the abdomen appeared to be a mass of disease. Numerous sinuses extended downward into the iliac regions of both sides, on the dorsum of the penis, and into the scrotum. The discharge had the fecal odour, and was very offensive. The sinuses were freely laid open. Three grape seeds were subsequently discharged from an opening in the right groin. Complete recovery ensued.

CASE II. This was a female, a patient of Dr. Fries. A swelling had for some time existed in the right iliac region. It was at first mistaken by the physicians who examined it for enlarged ovary. Suppuration occurred, the abscess was opened by Dr. Fries, and a *Lima bean* was discharged. This patient also recovered promptly after the discharge of the extraneous body.

Dr. Gurdon Buck, of New York, in the course of some observations on deep-seated abscesses, made before the New York Pathological Society,[1] gave a case of abscess "produced by a foreign body which had made its way from the cæcum, and set up inflammation posteriorly in the fossa of that side. The foreign body afterwards presented itself in an opening in the groin which had previously been made for the evacuation of matter, and proved to be a pin which was extensively incrusted. That patient—a male—ultimately recovered."

[1] New York Medical Journal, October, 1865.

I have collected other cases of the same character, but the history of them is not material to the present inquiry. Of thirty-two cases of fecal abscess, the origin of which was distinctly ascertained, in six the abscess was due to the presence of an extraneous body, producing ulceration and perforation of the cæcum.

b. The production of abscess by perforation of the intestinal coats by ulceration (cæcitis?) is a more common accident than the preceding. It is a form of disease not unfrequently met with in the interior portion of this continent.

In respect to severity of symptoms and gravity of results, perforation of the cæcum by ulceration may be divided into two classes: 1. Those in which the perforating ulcer is situated in the posterior part of the bowel; and, 2. Those in which the perforation involves the peritoneal covering. The symptoms of the second variety are not to be distinguished from those of ulceration and perforation of the *appendix vermiformis*. In a large majority of cases, the perforating ulcer selects the posterior part of the gut. Of fourteen cases, in two only did the ulcer involve that part of the bowel covered by the peritoneum.

The symptoms of perforating ulcer are these: Pain is felt in the right iliac region and tenderness to pressure exists. There are apt to be, also, more or less abdominal pain and uneasiness; disturbance of the bowels with dysenteric symptoms, and some impairment of the general health. These evidences of disease may continue for many weeks without attracting much attention, until a sudden increase of uneasiness in the right iliac region, and the development of a tumour in that locality, demand interference. The tumour develops itself downward to the outer half of Poupart's ligament, and upward and backward along the crest of the ilium to the posterior superior spinous process. Although I would not presume to deny the fact asserted by some writers that acute cæcitis may terminate by ulceration and perforation of the coats of the bowel, yet all my observations go to prove the existence of a characteristic form of disease, which I have ventured to denominate "the perforating ulcer of the cæcum." In the cases examined by me, the tubular glands of the cæcum, which are large and distinct, were the seat of ulcerative action, the intervening mucous membrane being comparatively healthy. The ulcer, when fairly established, is round, with smooth, even edges, slightly elevated above the surrounding tissue. It preserves these characters throughout. The distinctiveness and urgency of the symptoms will depend upon the number of ulcers in the cæcum; the progress of the case will be much influenced by the state of the vital powers; in a low and enfeebled state of the general organism the ulceration proceeds more rapidly. When perforation takes place, the sudden increase in pain is generally referred by the patient to a blow upon the part, or a strain, or some unusual position of the body; but these accidents only promote the giving way of the last portion of tissue

already in a state of slough. All of the attendant phenomena will be better exhibited by some illustrative cases.

CASE III. Mrs. M——, æt. 46, the mother of five children, after some months' of suffering from an intestinal disease, dysenteric in character, began to have pains of a very excruciating character in right hip. Soon after she observed a swelling in the right iliac region. This swelling was accompanied with pain down the thigh in the course of the crural nerve. She maintained the thigh flexed upon the pelvis and the trunk inclined forward and to the right. This position was assumed, obviously, to relax the abdominal muscles and prevent pressure upon the tumour, which was very sensitive to the touch. The swelling increased in size, pushing upward to the inferior border of the liver, and bulging outward over the crest of the ilium and extending backward to the posterior superior spinous process. She experienced hectic and profuse perspirations, and became very much exhausted, so that her life was despaired of. The abscess finally pointed just below and opposite the middle of the crest of the ilium. A quantity of offensive gas and matter escaped; but meanwhile several sudden and profuse discharges of pus took place from the rectum. She finally recovered completely.

CASE IV. Mrs. K——, æt. 25, Newport, Ky. She had suffered for nine months frequent attacks of diarrhœa, with abdominal pain and soreness, especially in the right iliac region. A swelling gradually developed itself in this situation. The pain became very acute, so that she could not bear the slightest manipulation of the tumour, although the abdomen in every other situation was soft and free from tenderness. As in the preceding case, much pain existed along the inner face of the thigh, and was acute in the knee. She carried her body much forward and to the right, and the thigh flexed upon the pelvis. She had, soon after the appearance of the tumour, daily paroxysms of fever and exhausting night-sweats, which were mistaken for a quotidian intermittent. When I saw her, in consultation, there was a firm, hard swelling in the right iliac region, not quite reaching to Poupart's ligament, extending above the crest of the ilium, which it overlapped, and reaching backward to the lumbar vertebræ. An obscure sense of fluctuation was perceived in the most prominent part of the swelling. Her catamenia were regular. She was much exhausted, had but little appetite, and suffered from occasional attacks of diarrhœa. After one of these attacks the tumour subsided very sensibly. Under the use of mineral acids and quinia, and chlorodyne to relieve the pain, she improved, and was at length able to go on a considerable journey to join her husband.

CASE V. (Dr. Fries.) A female. Symptoms same as in foregoing cases: a swelling in right iliac region extending above crest of ilium to lumbar region. Finally discharge of matter at posterior superior spinous process; discharge of fecal matter for nine months, when orifice closed and complete recovery ensued.

When the ulcer perforates that part of the intestine having a peritoneal covering, the symptoms and results are much graver than in the cases just detailed. When the perforation takes place, the symptoms of peritonitis declare themselves so suddenly and characteristically as to leave no room for doubting the nature of the accident. In one instance (Case VI.) which

has fallen under my observation, the symptoms of peritonitis were not so pronounced as I have described them. Generally, when the perforation takes place, we observe those provisions of nature to limit the ill effects. The peritonitis is circumscribed, adhesion takes place between the omentum and intestines in the neighbourhood, and the abdominal wall, and following the usual law, the pus seeks an outlet externally. These conservative efforts, unfortunately, usually fail. Sometimes, instead of the local, we have a general peritonitis, with all of its disastrous consequences, as in the following case:—

CASE VI. Was a female about eighteen years of age, who had suffered under some obscure abdominal trouble with diarrhœa. During the progress of the case, she was suddenly attacked with severe abdominal pain and tenderness, but no considerable depression of the vital powers. She died two weeks after this sudden increase in the gravity of her symptoms, but without giving satisfactory evidence of the serious lesions discovered after death. I found, on post-mortem examination, a round, smooth ulcer of the size of a silver dime, which had perforated the cæcum on its anterior part; general peritonitis existed, the intestines and pelvic organs being glued together so that they could not be separated without tearing the former, and the cavity contained forty ounces of very fetid sero-purulent fluid.

A very instructive case is reported by W. Sly, Esq., Assistant Surgeon Second Batt. 16th Regiment, in the *Statistical, Sanitary and Medical Reports of the British Army for* 1859 (p. 290).

This was a soldier æt. 30, "of strumous diathesis and delicate aspect." "On the 29th of June, after making a hearty meal, he walked quickly over the curragh, and on stooping low, in order to pass under a fence, he suddenly felt intense pain in the right iliac region. * * * In a few days, when he was able to bear manipulation, I discovered a tumour as large as the closed fist between the ilium and umbilicus, which I diagnosed as pericæcal abscess. * * * * On the 7th of July I opened an ischiatic abscess, which discharged freely up to the date of the man's death." At the autopsy were found "two ulcers in the cæcum, one of which communicated with a cavity formed by the adhesion of omentum to the parietes of the abdomen in front and behind. The pus which formerly filled this cavity must have escaped into the bowel through the enlarged ulcerated opening, for the abscess was nearly emptied."

Mr. Ferrall (*Dublin Journal*, 1839[1]) has described a case similar to the last.

A young girl was admitted to the Meath Hospital with a tumour in the right iliac region about fourteen days after the first attack; suppuration of the tumour had then occurred; the bursting of the abscess was soon indicated by a copious discharge of purulent matter from the bowels; soon after this another tumour formed in the upper part of the thigh, separated from the former by a deep sulcus corresponding to Poupart's ligament. The latter opened and discharged pus and ultimately fecal

[1] American Journal of the Medical Sciences, vol. xxv. p. 188.

matter. Mr. Ferrall exhibited to the *Dublin Pathological Society* the parts, showing the mode of communication between the abscess and the opening in the groin.

II. ULCERATION AND PERFORATION OF THE APPENDIX.—In a collection of eighteen cases, unequivocally produced by extraneous bodies, I find that the appendix was the seat of ulceration and perforation in twelve cases. There have been very opposite opinions expressed on this point. Mr. Ferrall assumed that the cæcum was the original seat of ulceration in iliac abscess, and joined issue with Dr. Burne, who had attempted to establish that the appendix was usually first diseased, the discharge of pus taking place through a subsequent perforation of the cæcum. Dr. Burne also excepted to the doctrine of Dupuytren (*Leçons Orales*, &c.) and of Menière, who held that the disease was in the cæcum only. Dr. Burne's analysis includes twenty-one cases, of which eleven were simple inflammation of the cæcum. Excluding the latter as not pertinent to our present inquiry, we have a total of ten cases, of which "two were chronic disease of cæcum; six were instances of perforation of the appendix, five being fatal; one was perforation of the cæcum from within and recovered; one was inflammation of the appendix with peritonitis, and was fatal." Dr. Hanbury Smith also regards ulceration and perforation of the appendix as the principal source of abscess in the iliac fossa. Habershon (*op. cit.*, p. 169) remarks that "ulceration and perforation of the intestine are much more frequently found associated with disease of the appendix than with ulceration of the cæcum itself." He reiterates this opinion in his remarks on tumours of the abdomen in Volume XI. of *Guy's Hospital Reports*.

Ulceration and perforation of the appendix may be due to simple inflammation and abscess, of which I have met but a single instance in a large number of autopsical examinations, or to lodgment of intestinal concretions, or other extraneous bodies. Three-fourths of the cases are produced by the latter accident. By what cause soever produced, there will follow perforation of the appendix, a local or general peritonitis. The symptoms, always pronounced, will vary accordingly. Both classes of cases are very fatal, but the latter are more fatal than the former. When the matters escape, and even before, during the progress of the disease in the appendix, adhesions take place so as frequently to shut off the greater part of the cavity from the local inflammatory action. It is in these latter cases only that abscess makes its way outward through the iliac and femoral regions. The same phenomena, precisely, occur in the case of perforating ulcer of the cæcum involving the peritoneal coat. An interesting case behaving in this way, but which terminated fatally, is related by Habershon, in Volume XI. *Guy's Hospital Reports*, 1865, p. 192. "The disease originated in the appendix and set up inflammation in the adjoining

cellular tissue; suppuration and abscess followed," the abscess opening below Poupart's ligament.

III. INFLAMMATION AND SUPPURATION OF THE SUB-CÆCAL CONNECTIVE TISSUE.—M. Dupuytren entertained the belief that abscess in the right iliac fossa was frequently dependent upon inflammation of the iliac fascia. Copland repeats these observations of the *Leçons Orales* upon this subject. The older writers in general held this view. It was supposed either that an idiopathic inflammation occurred in the sub-cæcal tissue, or that inflammation of the cæcum was transmitted to this tissue by contiguity of structure; matter being formed, discharge of it took place either through an opening in the bowel or in the groin. Dr. Horner, then Demonstrator of Anatomy in the University of Pennsylvania, related in the *Philadelphia Journal of the Medical and Physical Sciences*, 1820, vol. i. p. 141, a case of lumbar abscess upon which he remarked as follows:—

"This case I believe to have been unusual, in regard to the communication established between the abscess, situated in the iliacus internus and psoas magnus muscle and the cavity of the colon, and it may, perhaps, prove serviceable, by calling in similar cases the attention of the practitioner to the cause of a series of symptoms which embarrassed exceedingly all the medical gentlemen who were consulted about it. It is also a good example of the species of lumbar abscess, which, in the language of Mr. Abernethy, proceeds from the phlegmonoid inflammation in the part. * * * * The case just recounted seems to me, from the primary symptoms, and from the alteration of structure in the parts affected, to have been one of phlegmonoid inflammation, and would have been cured by the treatment, had not the diseased action extended itself through the parietes of the colon," etc. etc.

That Dr. Horner misapprehended the facts which he had observed, is probable from an examination of some circumstances in the history of the case. "In consequence of some injury or strain received in the prosecution of his business, the patient felt a severe pain arise in the lumbar and iliac regions," &c. Compare this history with that of the case reported by Asst. Surgeon Sly (see *ante*) and the close analogy between them will appear evident. It is probable, indeed, in all of the cases, that disease of the cæcum or appendix was precedent to the formation of matter in the iliac fascia. Dr. Burne, who criticized in his paper the views of MM. Dupuytren, Menière, and others upon this point, takes, as we have shown, a somewhat too narrow view of the subject, in referring the origin of the formation of matter alone to ulceration and perforation of the appendix. Mr. Ferrall, on the other hand, was equally partial in his views in referring all iliac abscesses to disease of the cæcum. M. Dupuytren was, undoubtedly, in error in ascribing so much importance to inflammation and suppuration of the sub-cæcal connective tissue, which plays, we now know, a very secondary part in the phenomena of abscess of the right iliac fossa.

COURSE OF THE ABSCESS.—I have collected nineteen cases in which the precise point the abscess discharged itself was unequivocally stated. In ten of these the pus descended along the sheath of the psoas muscle, and

presented itself underneath Poupart's ligament (cases of Horner,[1] Ticknor,[2] Buck,[3] Copland,[4] Habershon,[5] Ferrall, Howell,[6] and those given in this paper); in three into the bowel; in three both into the bowel and externally; in one into both iliac regions (Dr. Fries' case); in one opening into the bowel and also into the iliac artery (Dr. Barlow's case);[7] one into the lumbar region, posteriorly.

Dupuytren regarded the opening into the bowel as the safest termination of an iliac abscess, and the opening on the surface of the body as almost always fatal. The first opinion is probably correct; but the last is at variance with the facts herein presented. One-half of the cases in which the abscess opened externally terminated in recovery. I do not find a well authenticated case of recovery from ulceration and perforation of the appendix. Dr. Burne reports one case of recovery in six cases of perforation of the appendix, but he does not state the ground of his conclusion. It will be remembered that Dr. Burne does not believe in perforative ulceration of the cæcum, but considers that abscesses arising from perforation of the appendix frequently discharge themselves through the cæcum. It is obviously difficult to arrive at a correct conclusion on account of the impossibility of verifying the diagnosis in a successful case.

The pointing of the abscess is sometimes attended with phenomena well calculated to mislead. Instead of the "doughy" sensation of parts containing pus, the integument is distended with gas and is tympanitic. This condition of things existed in Dr. Buck's case, giving rise to the question, "whether the gut had not made its way to the surface." "This portion of the swelling was resonant, and on handling it, you could readily distinguish that it contained air." The very same remark could be correctly applied to the most prominent part of the swelling in Mrs. M——'s case, already detailed. A somewhat ludicrous description has been given me by a medical friend of this city, of his sensations of terror on opening what I presume to have been a similar form of abscess, when a quantity of gas escaping he supposed his lancet had punctured the intestine.

PROGNOSIS.—The conclusions arrived at after a survey of the whole ground may be summarily stated as follows:—

The prognosis is favourable if the abscess have been produced by a foreign body which has passed by ulceration through that part of the cæcum not covered by peritoneum.

The prognosis is favourable in one-half of the cases of perforation of posterior part of the cæcum by the perforating ulcer.

[1] Philadelphia Journal of the Medical and Physical Sciences, vol. i. p. 141.
[2] American Journal of the Medical Sciences, vol. xvi. p. 513.
[3] New York Medical Journal, vol. ii. p. 38.
[4] Medical Dictionary, vol. i. p. 332.
[5] Diseases of the Alimentary Canal, chap. viii., Phila. edition.
[6] Lancet, 1845, vol. i. p. 648.
[7] Ibid., 1853, vol. i. p. 340.

The prognosis is more favourable when the sub-cæcal abscess discharges itself through the bowel.

The prognosis is unfavourable, if the perforation takes place through that part of the cæcum with a peritoneal covering, or through the appendix.

In thirty-one cases of perforation of the cæcum and appendix there were eleven recoveries, seventeen deaths from general peritonitis, one death from hemorrhage (abscess opened into iliac artery), two deaths from exhaustion.

According to Dupuytren, the prognosis is not, in general, unfavourable. Of sixteen cases of abscess in the right iliac fossa observed by him, one only died.

DIAGNOSIS.—This affection may appear to be sufficiently characteristic to prevent mistakes in diagnosis; nevertheless some very curious mistakes are on record. Dupuytren remarks that he has frequently witnessed gross errors of diagnosis, especially in confounding psoas abscess with abscess of the iliac fossa. Mr. Cæsar Hawkins, in a clinical lecture (*London Medical Gazette*, Sept. 29, 1832, in *American Journ. of the Med. Sciences*, vol. xi. p. 503), thus alludes to the difficulty in many of these cases in making a correct diagnosis: "In short, the causes of these abscesses may be so numerous, and their course so varied and extraordinary, as sometimes to render them very puzzling and complicated." He gives a case in which an abscess following caries of the sacrum opened into the bowel and also externally, in the right iliac region, and feces were discharged through the external wound. More recently, Mr. Coulson (*London Lancet*, vol. ii., 1856, p. 518) has also discoursed upon the difficulty of determining the origin of abscesses in the neighbourhood of the vertebræ.

M. Brichetau (*Archives Générales*, 1838) has related a case of abscess in the iliac fossa which was at first presumed to be neuralgia of the hip. In the same periodical a case is related in the practice of M. Berard, which had been long mistaken for coxalgia. This will not appear extraordinary when it is remembered that a severe pain in the hip may be one of the earliest and most pronounced symptoms as in the case of Mrs. M——.

It would not be profitable to occupy much space with a minute detail of the symptoms by which the form of abscess under consideration may be distinguished from other affections. It will suffice to enumerate the diseases with which it may be readily confounded: 1, psoas abscess; 2, abscess connected with caries of the pelvic bones; 3, pelvic cellulitis or pelvic abscess; 4, abscess in the abdominal wall; 5, disease of the hip-joint.

TREATMENT.—Excluding the heroical remedy, "general bleeding," from the category, we cannot improve much on the practice of Dupuytren: local and general bleeding; fomentations, poultices, baths, lavements, and laxative drinks. In my experience nature is very competent to manage the case. In perforation of the cæcum involving the peritoneum, or of the appendix, a fatal result may be anticipated, do what we will, unless adhesions localize the inflammation, when an abscess may form in the right iliac region—a

rare result, but the chances of which we must not diminish by too heroic treatment.

In a large number of cases, as we have seen, either a foreign body or a perforating ulcer opens the posterior part of the bowel, and the abscess forms in the sub-cæcal tissue. If left to itself, the abscess tends outward, and in a majority of cases recovery ensues. In addition to the simple measures of Dupuytren, we have to give the patient what is called "the supporting treatment." I think it not well to make haste to use the knife. On the other hand, Dr. Buck, who is high authority, says: "The proper treatment, which has been successful in my hands, is this: upon ascertaining the existence of the abscess, I, without waiting for fluctuation to establish itself, make an outlet for the matter below the outer half of Poupart's ligament, and parallel with it, first through the integument, exposing the fascia of the thigh. This fascia being divided, you pass under the ligament, and get behind the iliac fascia. The incision thus made is to be kept open by a plug of lint, renewed every twenty-four hours." This practice, I may be permitted to observe, is not always proper, since a discharge of the abscess through the opening in the bowel is the most favourable termination. Bursting of the abscess into the peritoneum is an accident not to be apprehended in these cases.

ART. IV.—*On the Inhalation of Atomized Medicated Liquids and its Value in the Treatment of Diseases of the Respiratory Organs.* By JOHN HART, M. D., Boston, Mass.

IN the spring of 1865 my attention was attracted by the reports of some cases of diseases of the respiratory organs which had been treated successfully by the new mode of inhaling atomized medicated liquids, and I therefore determined to investigate the subject carefully, and test its value by experience. As a suitable apparatus could not then be obtained, I constructed one myself. After having treated several patients with good results, I exhibited my apparatus at the meeting of the Suffolk District Medical Society, September 30, 1865, and presented the results of this treatment as obtained from the numerous reports of eminent German practitioners. Since then I have resorted to this treatment in a large number of cases with satisfactory results.

Inhalations were recommended in the treatment of diseases of the respiratory organs in the early periods of medical science. Aretæus, Galen, Plinius, Aëtius, Dioscorides, and the Arabians advocated inhalations of vapours and sea-air. Subsequently various gases and vapours, chlorine, iodine, tar, turpentine, etc., were recommended for inhalations; but the

efforts which have been made within the last few years to convey remedial agents to the air-passages have been more successful. Medicated liquids have been atomized or converted into such minute particles that they appear in the air like mist or spray, and in this form they are inhaled with the atmosphere.

Mineral waters were first atomized in 1849 by Dr. Auphan, by throwing a stream of water with great force against a wall, and the patients inhaled the minute particles which were thus formed and floated about in the atmosphere of the apartment. The first apparatus, which Flubé and Sales-Girons constructed, was for the purpose of filling a ward with atomized mineral water at Pierrefond, where fifteen patients inhaled at the same time. For the purpose of atomizing other medicated liquids, Sales-Girons had subsequently a portable apparatus constructed on the same principle as the one used at Pierrefond. To describe the numerous apparatus which have since been constructed would be unprofitable, and I will therefore confine myself to the description of those only which at present are mostly in use.

Sales-Girons' apparatus consists of a strong glass bottle, into the neck of which an air-pump is fastened. The air being condensed at the top of the liquid, the latter is forced through a narrow tube, which has a capillary opening at its free extremity, and is thrown through an aperture in a glass cylinder against a convex lens directly opposite, where it is divided into fine particles. The patient sits before the glass cylinder and inhales these particles, which appear in the form of a fine spray. Mathieu constructed an apparatus which he called Nephogène. It consists of a condenser, where the air is compressed to a certain degree; a valve is then opened, and the air passes through an elastic tube into a glass ball, which contains the medicated fluid, and with this it passes with such force through a minute opening that the stream of water is changed into a cloud of atomized liquid. These two apparatus were much in use until Bergson invented his Hydroconion, and Siegle his Steam-Hydroconion. These are based upon the principle that if two glass tubes with capillary openings at one of their extremities are connected in such a manner that the capillary extremities form a right angle, and that the capillary extremity of the tube which is to convey the medicated fluid is so arranged as to cover about half of the capillary opening of the other tube, and air or steam is forced through the latter, which has a horizontal position, a vacuum will be formed in the other, which has a vertical position, with its lower portion passing into the medicated liquid, the liquid will rise to the top, and there by the force of air or steam be divided into the most minute particles, forming a beautiful spray.

Tubes arranged as here described are generally called Bergson's tubes. Professor Wintrich modified them, dispensed with the connecting medium, turned the capillary extremity of the tube passing into the liquid to a right angle, and bent the tube conveying air or steam in a proper position to

the former. Thus the tubes could be made with a free extremity of several inches, be passed into the mouth or other cavity, and the spray be formed there. This modification has lately been adopted for local anæsthesia, by a member of our society, supposing it to be new. The size of the capillary openings and the proper adjustment of the tubes are of the greatest importance in constructing an apparatus. The size of the capillary openings influences the fineness of the spray and the rapidity with which it is formed; the rapidity is also influenced by the greater or less force of the condensed air or steam. Physicians who buy the tubes for their apparatus frequently complain that they either do not work at all, or that one set will atomize an ounce of fluid in five minutes, whilst with another it cannot be done in less than an hour. These uncertainties can be avoided by a careful selection of tubes or by the practitioner making them. This can readily be done by taking a glass tube of about an eighth of an inch diameter, heating this over an alcohol lamp or Bunsen's burner, drawing it out to a fine point, breaking this off at the proper place, and rubbing the point on fine sand-paper or stone until the opening has the desired size. Two such tubes may then be connected and kept in proper position by a wooden or silver clasp, or by a glass rod. In my own practice I use tubes with openings of different sizes. The exact size of the openings of these I am unable to give, but they vary to such an extent that the largest will atomize an ounce of fluid in five or eight minutes, producing a coarse spray, and the smallest in fifteen or twenty minutes, producing a very fine spray, using only a moderate pressure of steam in either. By raising the pressure of steam the spray will be produced more rapidly and thrown with greater force. It is necessary to be able to produce a coarse or fine spray, if we wish to treat successfully the diseases of the different portions of the air-passages.

A little copper boiler, about three inches in diameter and three inches high, with a tube in the top, will generally answer the purposes of a steam boiler. Into the top of the tube a rubber stopper is inserted, through which the glass tube which conveys the steam passes. By proper caution the rubber stopper will never be blown out by the pressure of the steam, but to make it perfectly secure a pin may be passed into the stopper through a small hole in the copper tube. If we wish to apply a cheap safety valve, another glass tube may be passed through the stopper. This tube is closed at its free extremity, and has an opening at the side which is covered by a small piece of rubber tube. By the pressure of steam the rubber will be raised, and the steam have a chance to escape. A stand for the boiler and glass which contains the medicated liquid can easily be made of sheet iron or tin. When the apparatus is to be used, about three ounces of hot water are put into the boiler, and by placing an alcohol lamp or gas burner under it sufficient steam will be made to keep the apparatus in operation.

On using my apparatus, I soon saw that it was important to protect the

face of the patient from the spray. I therefore had a glass funnel cut off, so as to leave an opening of three-quarters to one inch diameter, and attached it to a separate stand in such a manner that it could be turned about and also raised or lowered, or moved farther away from the formation of the spray. A tumbler or cup is placed below the funnel to receive the fluid which accumulates on its inner surface. An apparatus like the one described will cost but a trifle, and will answer every purpose as well as those which are more costly. I do not claim any originality or any peculiar advantages for my own apparatus, but the credit of having constructed the first apparatus, and having first brought the subject of inhaling atomized medicated liquids before the profession in Boston.

Do Atomized Liquids penetrate into the Air-passages?—Almost every new theory in science and every step for improvement meet with more or less opposition. Inhalations of atomized medicated liquids have not been exempt from the general rule, and the opponents who were willing to acknowledge the great acquisition which would be gained by the local treatment of diseases of the respiratory organs, denied the possibility of atomized liquids penetrating into the air-passages, and disbelieved the practical value claimed for them. But fortunately numerous experiments, and the success of this new treatment have proved the contrary. In proof of this we refer to a few remarkable facts. Demarquay made numerous experiments upon squirrels, and the inhaled liquids were detected in the air-passages and even in the parenchyma of the lungs. These experiments were repeated by Fieber in Germany with confirmatory results. Demarquay also experimented upon a nurse, who was obliged to breathe through a canula; she inhaled a solution of tannic acid whilst the tracheal opening was closed, and the presence of the acid was proved in the trachea by paper which had been moistened with a solution of chloride of iron and dried again.

I will only call attention to two more and very important cases, which alone ought to suffice to prove the penetration of atomized fluids into the air-passages. One, a case of consumption with severe hemorrhage, was under the care of Dr. Lewin. The hemorrhage was arrested by the inhalation of a solution of sesquichloride of iron. The patient died, and at the autopsy a large cavity was found in the upper lobe of the right lung. It contained shreds and fluid of a blackish colour and some dark-red coagula. The fluid and coagula were analyzed by Dr. Schultz and found to contain iron. The other was a case of Bright's disease under the care of Prof. Zdekauer, of St. Petersburg. The patient had a fearful attack of hemorrhage from the lungs, which was arrested by inhaling a solution of sesquichloride of iron. After two days the patient died. Dr. Holm examined the infiltrated lung-tissue, and detected a much larger quantity of iron than would naturally be present. Were it not that we have sufficient proofs of the penetration of atomized liquids from experiments made directly for that purpose, the clinical results which have been obtained from those inhalations entitle

them to be highly valued as a means for the local application of remedial agents to the air-passages, and for the more successful treatment of various diseases of the air-passages.

Temperature of the Spray.—If Bergson's apparatus be used, and the temperature of the room be 19° R., and that of the liquid also 19° R., the temperature of the spray at its point of formation will be 17° R., and at a distance of eight inches 16° R. The higher the temperature of the liquid is, the greater will be the change in the spray. Thus, if the temperature of the liquid be 60° R., the temperature of the spray will be 40° R. at the point of its formation, and it will fall to 17° R. at a distance of eight inches. If the liquid have a temperature of 5° R., the temperature of the spray at its point of formation will be from 9 to 10° R., and at a distance of eight inches about 14° R.

If Siegle's Steam-Hydroconion is used, the temperature of the spray will be much higher than that of the liquid. The nearer to the apparatus the patient inhales, the warmer will be the spray; and the farther, the cooler it will be.

There are but few remedies which are chemically changed by the atomizing process, and as their therapeutic action is not impaired by the change, it will not be necessary to mention them here.

Directions for administering Inhalations of Atomized Liquids.—The patient takes his seat directly in front of the apparatus, which is raised so high that the spray will be on a level with the centre of the open mouth. The patient sits erect, and rests his arms upon the table, or leans against the back of the chair. When the apparatus begins to work, the patient turns his head slightly backwards, and opens the mouth as wide as possible; the spray ought to pass directly through the centre of the open mouth, and the patient is directed to take long and regular inspirations, if the fluid is to penetrate into the minute passages; if it is to be applied to the pharynx, superficial inspirations will be sufficient. During the first sittings, the temperature of the spray may be higher than would be required, because it does not irritate the larynx and excite coughing, if it be warm; the patient's mouth may, therefore, be only four to six inches from the capillary openings, and the distance be gradually increased as circumstances may require. According to the susceptibility of the patient, the first sittings may only be from three to five minutes' duration, and afterwards be prolonged to ten, fifteen, and twenty minutes. Frequent periods of rest must be allowed during the inhalations, because if they are continued without interruption the inspirations become too frequent and superficial. Patients ought to inhale either before or a considerable time after meals, so that the lungs may expand freely. Mental and bodily exercise must be avoided, and if Bergson's apparatus be used, the patient must not keep it in operation himself.

The force and temperature of the spray are to be regulated according to

the pathological conditions of the parts. Special rules cannot be given in this regard, and experience will be a better guide. With little practice, patients soon learn to inhale properly and avoid coughing. Persons who are very nervous may inhale only the spray of water at the first sittings, and have the medicine added afterwards.

If patients are left to themselves, they will easily assume a wrong position and inhale carelessly. The apparatus may also become obstructed and not work properly. Physicians who do not devote themselves patiently to this new mode of treatment, and leave remedies for their patients to use themselves, and do not attend to them personally, will never realize the full benefits of this treatment.

After each inhalation, the patient may gargle with pure water, particularly if the remedies act injuriously upon the teeth, or if they are not intended to affect the mucous membrane of the mouth or pharynx. Inhalations must not be administered immediately after bodily or mental exercise, at least not until skin, pulse, and respiration have returned to their normal conditions. Neither is it advisable for patients to go out of doors immediately after an inhalation; they ought to remain in a comfortable room for a quarter of an hour afterwards. Other suggestions might be made, but they will readily occur to the mind of intelligent physicians.

Diseases which have been treated by Inhalations of Atomized Medicated Liquids and the Results which have been obtained.—Inhalations of atomized liquids have been used more extensively in chronic than in acute diseases, not because they are more applicable to the former, but because patients suffering from chronic diseases, particularly such as do not easily yield to remedies, try every variety of treatment from which relief may be expected.

Diseases of the pharynx will generally yield more readily to this treatment than those of the larynx, bronchi, and lungs, probably because the application is more direct. The length of time during which a certain disease has existed cannot serve as a guide for determining the time which will be required for its cure. I have treated patients for certain affections of the air-passages which had existed for five years, and which yielded immediately; whilst others, which had persisted for only two years or less, were refractory, and liable to relapse. Patients always expect miracles from any new treatment, and will easily be discouraged if a favourable result be not immediately obtained. Physicians themselves are also frequently too sanguine in their expectations, and lose confidence in the treatment which is not speedily successful. It must also be remembered, that diseases frequently seem to be aggravated by the first few inhalations, and yet it would be wrong to either abandon the treatment or change the remedies.

Diseases of the Nasal Passages.—To apply remedies to these passages I have constructed an apparatus for the purpose of conveying to them a condensed volume of spray. The face-protector terminates in a tube which

can be introduced into one of the passages; during the inhalation the other passages and the mouth are closed, and the whole amount of air is drawn through the tube. Half the quantity of medicated liquid is inhaled through one and the other half through the other passage. The medicine penetrates into the passages, and even to the pharynx, which is proved by the taste and the chemical reaction of the sputa. Nasal catarrh and coryza with copious and putrid secretion have been treated successfully by German practitioners and by myself. In connection with the inhalations, I also frequently use the nasal douche and injections.

Diseases of the Mouth and Pharynx.—In these diseases inhalations of atomized liquids have been used with the most brilliant success. This fact is sufficiently established by the experience of Sales-Girons, Demarquay, Trousseau, Fieber, Waldenburg, Siegle, Lewin, Schnitzler, Vogler, etc., as well as by my own. The affections which have been treated are pharyngitis catarrhalis, granulosa, ulcerosa, crouposa, syphilitica. Sometimes it is necessary to assist the local treatment by constitutional treatment, particularly in syphilitic affections. A more rapid and decided effect is sometimes produced by applying the medicated liquid in the form of a douche, *i. e.*, by throwing a large quantity of coarse spray with considerable force against the mucous membrane of the mouth or pharynx.

Diseases of the Larynx.—Catarrhal laryngitis is treated very successfully with inhalations of atomized liquids, particularly if it be of recent origin. In acute cases, accompanied by pain, difficulty of swallowing, heat and dryness, mucilaginous liquids combined with narcotics are indicated; whilst chronic cases generally demand astringents with or without narcotics.

Tubercular laryngitis, particularly if the lungs are implicated, is more resistant than other diseases. Cases which have existed but a short time sometimes yield to this treatment, but even in such cases relapses must be expected. Though the cases in which a perfect cure can be established are necessarily very rare, most of them can be improved and the distressing symptoms be ameliorated or entirely removed.

Syphilitic laryngitis has been treated successfully by Demarquay, Waldenberg, Schintzler, etc.

Croup and diphtheria have also been treated successfully by Barthez, Fieber, Trousseau, Lewin, Siegle, Biermer, and Schnitzler. Trousseau also mentions two cases of œdema of the glottis which were cured by inhalations of tannin; they were both very severe, and in one tracheotomy seemed to be unavoidable.

Hooping Cough.—Dr. Fieber reports a case where the disease had existed eight weeks without any change. He resorted to inhalations of mistura oleosa and extract of hyoscyamus, and after the seventh day the patient was so well that the treatment was discontinued. Wedeman, Gerhardt, and Siegle also report cases, which were treated with success.

New Formations.—These should only be treated by inhalations when it

is impossible or inadmissible to remove them by a surgical operation. Although it can only be expected that by this treatment those of small size can either be removed or arrested, attendant distressing symptoms can frequently be much relieved.

Hoarseness and Loss of Voice.—These are only symptoms of various affections of the larynx, and must be treated accordingly. They are frequently caused by catarrh, inflammation and ulceration, by new formations and also by paralysis of certain muscles. Alterations of the voice may also have a rheumatic origin or be caused by overtaxing the voice, which is frequently the case with preachers, public speakers, and singers. We must not overlook hysterical aphonia, which doubtless depends upon functional derangement of the nervous system.

Dr. Lewin reports a large number of cases which he treated successfully, and he also remarks that the cures were more rapid and the improvement more lasting than if cauterization had been used. I have treated several cases and have found that those depending upon catarrh, inflammation, and even ulceration would rapidly improve. Two cases, which were tubercular, but where the hoarseness had existed but a short time, were soon relieved; whilst another, where the voice had almost entirely been lost for two years, did not improve at all. The lungs were seriously affected in all three.

Diseases of the Bronchi.—Simple bronchial catarrh, not yet become inveterate, is almost invariably cured or improved. Acute bronchial catarrh, accompanied by pain, irritating cough, heat and dryness, and difficult expectoration is treated with the same remedies as acute catarrhal laryngitis; but it is necessary that the inhalations be more frequent and of longer duration, so that a larger quantity of fluid may be inhaled, since a large surface of mucous membrane is generally affected. The inspirations must also be slower and deeper, as it is of the greatest importance to have the medicated fluid penetrate to the minute ramifications of the bronchi. It is necessary also to be cautious in regard to the doses, particularly if astringents are used, which are indicated in chronic cases with profuse secretion. Such cases generally require patience and perseverance; nevertheless, the best results may be expected. Though it is but a few years since this treatment was introduced into Germany, yet numerous cases of long-standing affections of the bronchi are reported to have been treated successfully. I have treated a number of cases of chronic bronchitis, which had resisted the usual methods, and they were in a very short time entirely relieved and no relapses occurred.

Two symptoms, which frequently accompany chronic bronchitis, putrid expectorations and dyspnœa, deserve particular attention. Putrid expectorations can generally be arrested by inhalations of astringents or balsams, and the free exercise of the lungs during inhalations may justly be considered as producing a curative effect upon dyspnœa.

Bronchiectasis.—The existing organic disease cannot be cured, but all the symptoms which accompany it may be relieved. The excessive secretion and cough may be diminished, the putrid odour of the sputa removed, and the dyspnœa much reduced. In some cases it is even possible that the vesicles of a portion of an affected lung may regain some of their former elasticity, and become permeable to air.

In a case which had persisted for several years, and during the last six months the patient had suffered much from profuse secretion, intense cough, and dyspnœa, so that most of the time she could only rest and sleep in a sitting position, was relieved under my treatment. During the first inhalations the expectoration was profuse, but this, as well as the dyspnœa and cough, rapidly decreased, and after a month's treatment the patient was discharged. Four months after discontinuing treatment she still felt perfectly well.

Asthma.—The treatment of this disease varies according to its character. Asthma which depends upon other affections needs different treatment than that which is purely nervous. Inhalations of atomized medicated liquids have been used with great success in either cases. Several patients under my care have been benefited, and one, who had suffered from asthma for several years, and who had had frequent and long attacks, was entirely relieved upon six inhalations, and had no relapse during the five succeeding months, when she removed to another part of the country.

Emphysema.—I cannot speak from experience in regard to this disease, but will give Dr. Wedeman's opinion. He says: "Inhalations of atomized liquids have such a decided influence in bronchiectasis, emphysema, and other asthmatic affections, that they will always be resorted to as soon as their beneficial effects are sufficiently known. In all our cases (at Gerhardt's Clinic), dyspnœa, the most distressing symptom, was removed, the pains in the chest relieved, cough and expectoration diminished, and much relief procured for the patient."

Phthisis.—This disease being of great importance, I intend to make it the subject of a separate paper, and only wish to say here that incipient phthisis can frequently be arrested, and the distressing symptoms of the advanced stages, such as cough, dyspnœa, etc., be much relieved.

Hæmoptysis.—If inhalations of atomized medicated liquids were of no other value than to convey hæmostatics directly to the bleeding air-passages, they would deserve to be highly esteemed by physicians and the community. Not only a dangerous symptom can thus be relieved, but patients are also spared the greatest anxiety and fear of immediate death; and hope for recovery, which nature so lavishly bestows upon consumptives, is rekindled in their bosoms. The numerous favourable reports, which have been published, are from such high authority that no doubt can be entertained in regard to their truthfulness. The results of several cases, which occurred in my own practice, fully confirm the value of each inhalation.

In conclusion, I will give a list of the most important remedies which may be used for inhalations. Any remedy which is soluble can be atomized, but I will mention only those which have been used with benefit either by foreign practitioners or by myself. Exact doses cannot be given, as they vary according to circumstances. Each dose is to be mixed with an ounce of water, and a certain quantity of such a solution is used for an inhalation :—

Tincture of opium, gtt. iij–x.
Acetate of morphia, gr. $\frac{1}{32}$–$\frac{1}{1}$.
Extract of hyoscyamus, gr. $\frac{1}{4}$–jss.
Extract of conium, gr. ss–iij.
Solution of sesquichloride of iron, gtt. j–x.
Tannic acid, gr. ij–vij.
Alum, gr. ij–viij.
Nitrate of silver, gr. ss–x.
Chloride of sodium, gr. j–viij.
Fowler's solution, gtt. j–xx.
Corrosive sublimate, gr. $\frac{1}{16}$–$\frac{1}{4}$.

Various infusions may also be used with advantage in the boiler by which the medicated liquids are combined with medicated steam.

ART. V.—*Hypodermic Injections in the Treatment of Disease.*

By R. B. MAURY, M.D., Port Gibson, Miss.

A REVIEW of this subject in the *American Journal of the Medical Sciences* for April, has suggested the present article. It relates chiefly to the hypodermic use of quinia in malarial fevers, and may be of interest to the profession, as I am not aware that any publication has been made of its use in these diseases by American physicians.

My experiments were made in December, 1864, and January, 1865, while I was a surgeon in the "Confederate Army," in charge of General Hospital, Greenville, Ala., and formed the subject of a report to the Surgeon-General at Richmond. A retained copy of the tabulated statement of cases, which accompanied the report, was lost, so that I am necessarily confined to a statement of general results, and will merely quote from the report such parts as seem desirable.

This report embraces the history of twenty-five cases of malarial fevers, of which six were bilious remittent, five were quotidian intermittent, thirteen were tertian intermittent, and one a case of double tertian intermittent. The instrument used was the ordinary Wood's syringe for hypodermic injections, carefully graduated and found to carry thirty minims.

The seat of its introduction in the treatment of these cases, was usually the cellular tissue of the arm, about the insertion of the deltoid; sometimes it was introduced into the forearm. The preparation used was a perfectly clear solution of the sulph. of quinia in water with a sufficient quantity of dilute sulphuric acid: sixty minims of the solution contained eight grains of quinia. In cold weather the solution required to be well warmed before injecting it, because at moderately low temperatures it crystallizes rapidly and obstructs the syringe: it is then also painful to the patient.

In most of the cases, six grains was the entire quantity of quinia used during an intermission or remission: in the severer cases eight grains was the quantity used. Cinchonism was fully produced in from forty to sixty minutes.

The cases reported were from the troops on duty at Spanish Fort and the other defences of Mobile; they had all suffered more or less severely from malarial disease during the previous summer and fall; therefore, as it would have been necessary to repeat the administration of quinia, if given by the mouth after the paroxysms were broken; so in this mode of treatment, it was generally repeated twice by injection, to prevent a return of the paroxysm.

On two occasions, it will be seen that the chill occurred, in spite of the remedy, at its usual hour, or at some irregular hour on the same day, as it often does after the ordinary mode of administration. In the intermittent cases, no patient was injected until at least one chill had occurred after his admission to hospital; in the cases of bilious remittent, no quinia was used at all until the third or fourth day of the disease.

It is thought that the hypodermic may be preferable to the ordinary mode of administration under the following circumstances:—

1st. Where the economy of quinia becomes an object of great importance: this method requiring about one-third the quantity necessary if given by the mouth.

2d. In cases of fever, in which, from excessively irritable stomach, it is difficult to use remedies in the ordinary way.

3d. In the congestive forms of fever where absorption by the stomach is slow; or, in cases where there is not sufficient time to get the patient under the influence of quinia, given in the ordinary way, before the expected hour of return of a congestive paroxysm, life might be saved by introducing it through the cellular tissue.

The occasional occurrence of abscess is the only objection noticed to the hypodermic method: this occurred in two instances out of the twenty-five cases reported, and was attributed to a repetition of the injection in the same place; subsequently, when the injection was repeated, it was put into the forearm."

It may be observed from the above report that so far as the constitutional effects of the medicine are concerned, I claimed no more for it than

is accomplished in the administration of quinia by the mouth, and I am not inclined to believe, with Dr. Chasseaud, of Smyrna, that relapses will be less frequent after this than after other modes of treatment.

In 1858, during my term of service as House Physician to Bellevue Hospital, New York, the use of morphia, hypodermically, was introduced by Dr. Geo. T. Elliot, Visiting Physician, in the treatment of sciatica; since then I have used the syringe in a variety of cases, and often beneficially.

Very recently I have had under my treatment a most aggravated case of neuralgia, of five months' standing, which has resisted all the constitutional and local treatments employed, and from which there was no relief except by the administration of large doses of morphia; this was followed by so great and long-continued nausea, that the patient hesitated between enduring the pain and suffering the after-effects of the remedy. The pain was referred to the course of the sciatic nerve and its branches, and to all parts of the right lower extremity supplied by the branches of the lumbar plexus of nerves. The right half of the scrotum supplied by the scrotal filament of the musculo-cutaneous branch of this plexus was swollen and painful, and my patient was so great a sufferer that he would willingly have consented to amputation at the hip-joint had such a mode of relief been proposed. Between the 7th and the 27th of March he received thirty-five injections of Magendie's solution of sulphate of morphia—usually one grain to the injection. The result was uniformly a period of from twelve to twenty hours of absolute comfort and freedom from pain. The remedy seemed to exhaust itself in relieving the pain, and did not produce the usual sleep of opium. During the day he rarely slept; at night his sleep was natural. Neither nausea nor constipation followed this mode of using morphia, and though he had for a long time been accustomed to its effects when taken by the mouth, he did not suspect that he was using anything of the kind until he had received about twenty injections. I may add that no abscess or other unpleasant result was observed in this case.

ART. VI.—*Statistics of Height and Weight.* By S. HENRY DICKSON, M. D., Prof. Practice of Medicine in Jefferson Medical College, Philad.

I OFFER to the readers of the *Journal* the following tables on a subject certainly of some interest to the physiologist as well as to the public economist. If they prove nothing absolutely, they afford reasonable grounds for the belief that the dogma of Buffon as to the inferiority of animals in our New World from the nature of causes geographically and topographically impressive, and the opinion of Knox that degeneracy must inevitably result from our indefinite hybridism are untenable. They show that the

new race which is growing out of this almost unlimited intermixture exhibits thus far no deterioration, but will bear a comparison with all other races of the Old World in every point of physical development. They tend to convince us that the principles of selection and elective affinity may be confidently trusted to, to preserve the better orders of the human animal and to eliminate the inferior grades as fast as they are likely to arise from promiscuous and uncongenial "miscegenation." Of the moral or intellectual results we are not prepared yet to speak; except that they have been found always closely if not indissolubly connected with physical form, in its symmetry, beauty, and vigour. It is possible that some few exceptions may be pointed out, as in the Patagonians and some of the islanders of the Southern Seas; but these may be accounted for, when all the facts are known, by the efficient force of causes not yet appreciated.

The first of these tables contains the height and weight of 286 young men belonging to the last winter's class of Jefferson College in this city. The whole number of the class was 425. No selection was made; the tabulation was restricted merely by the passive difficulties which always present themselves in the way of similar efforts—the *vis inertiæ*—the carelessness, and want of interest which prevail. Thus I failed to obtain any statement from the Tennesseeans, 13 in number; the North Carolinians, 8; and the Minnesotians from the far West, 3; all of these tall, sturdy young fellows.

I have set down the lineage as they gave it. All of them knew what blood filled their veins chiefly; many were aware of a greatly mixed origin. I have placed the adjectives in the order of frequency in which they were tabulated. It will be seen that the English is the principal stock by far, occurring everywhere. Others prevail locally:—

Whole number.	Nativity.	Number tabulated.	Average age.	Average height.	Average weight.	Lineage.
			Years.	Ft. In.	Lbs.	
205	Pennsylvania	133	24½	5 8½	147	German, Irish, Scotch, English, French, Welsh, Swiss.
35	Kentucky	34	25	5 11	163½	Irish, English, Scotch, French, German.
18	Ohio	16	25½	5 8½	144½	English, Irish, Scotch, German, French.
16	Illinois	11	26	5 9	148½	English, Scotch, Irish, German, French.
10	Mississippi	10	26½	5 10½	156	Scotch, English, Irish, French, German.
12	Delaware.	12	23½	5 8½	146	English, Irish, Scotch, French, Welsh, German, Swede.
11	Indiana	9	24½	5 10	154½	English, German, Scotch, Irish.
12	New England	9	24½	5 9	148⅔	English. Scotch
10	British Provinces	9	22½	5 10	148	Scotch, English, Irish.
14	Michigan, Iowa, Missouri, Kansas: Northwestern States	9	25	5 10	156⅔	English, Scotch, Irish, German, French.
13	New Jersey	7	23	5 8	146½	English, German.
13	Virginia	9	23	5 9½	145	English, Scotch, Irish, Welsh.
4	Texas	4	24½	5 10½	163½	French, English, Scotch, Irish.
4	South Carolina	3	22½	5 10½	158	Scotch, English, Dutch, Irish.
2	Arkansas	2	26	5 8½	132	English.
5	Maryland	1	22[1]	5 11[2]	145[3]	Scotch, Irish.
2	Alabama	1	22[1]	5 9[2]	135[3]	English.
8	New York	7	31¼	5 8	147½	English, Irish, Scotch.

[1] Aged. [2] Measured. [3] Weighed.

Of the whole number tabulated the average age is 24 years; height, 5 feet 9¼ inches; weight, 147 lbs. The Kentuckians are the tallest men: their average is 5 feet 11 inches: they give the tallest man, 6.6.

Nineteen of the 34 measure 6 feet and upwards, 1 in 1$\frac{5}{9}$—more than half the number! They are also the heaviest: one of them weighs 220 lbs., and 3 are of 200 lbs. and upwards, 1 in 10¼. Texas stands next in average height, 5.10$\frac{3}{4}$; the average weight is just the same as Kentucky, 163¼. Of 6 feet and upwards: Kentucky 19 in 34; Mississippi 4 in 10; Delaware 3 in 12; British Provinces 2 in 9; New England 2 in 9; Arkansas 1 in 2; Virginia 2 in 9; Iowa 1 in 2; Missouri 1 in 3; Texas 1 in 4; Indiana 1 in 9; Illinois 1 in 11; Pennsylvania 7 in 133. Whole number of 6 feet and above, 45 = 1 in 6¼ very nearly.

In September, 1857, I published some similar tables in the *Charleston Medical Journal*, which I reproduce here, briefly and in part, for the sake of comparison and wider inquiry:—

No. 2. In the class of the South Carolina Medical College of the year 1847, 183 in number, there were 12 young men who measured 6 feet and upwards, and 15 between 5.10 inches and 6 feet. The tallest was 6 feet 4 inches in height: there was 1 of 6.3: there were 4 of 6 feet 2 inches: there were 2 of 6 feet 1 inch, and 4 of 6 feet.

No. 3. The height, weight, and lineage of the 95 candidates for graduation in the same Medical College, in 1857, are next recorded. Twenty-five of these measured 6 feet and upwards—one in 3$\frac{3}{4}$ nearly. Twenty-three stood from 5.10 to 6 feet in height, and 22 from 5.8 to 5.10. The tallest was 6.3. The heaviest of them weighed 182 lbs. The average age was 22½ years: average height, 5.9: average weight, 145 lbs. Their lineage was Scotch, English, Irish, French, Welsh, German, Dutch, Swiss. Few claimed to be of pure or unmixed blood; few could define the proportions of their hybridism. Almost all were British by descent: of these 16 were partly Welsh. There were 17 with French blood in their veins; besides 5 German, 4 Dutch, and 2 Swiss in part.

No. 4. I obtained from the "Citadel Academy," a State institution where the youth of South Carolina received an education partly military, the following statistics: Of the whole number, 89, the average age is 18 years 6 months, the average height 5 feet 7 inches, the average weight 134 lbs. Six of the number measured 6 feet and upwards = 1 in 15. Two of them were 6 feet 2 inches in height. Fifty-five claimed to be of English blood, wholly or partly; 36 Scotch; 32 French; 24 Irish; 6 Welsh; 8 German; 2 Dutch (Hollander); 1 Swiss.

The subject having attracted attention, I obtained some additional tables, which will be found in full in the same *Journal* for July, 1858. I make a few extracts here:—

No. 5. Of the class in attendance at the South Carolina Medical College, 1857–'58—the whole number being 216—I have the list of 141 names—

taken promiscuously, as their indifference permitted—in no sense picked or selected. Of these the average age is between 21 and 22 years; average height, 5 feet 9 inches; average weight, 145 lbs. Thirty-four are in height 6 feet and upwards = 1 in $4\frac{1}{2}$. Ninety-two are of English blood, pure or mixed; 55 Irish; 54 Scotch; 26 French; 11 Dutch; 8 German; 8 Welsh; Swiss, 2; Hebrew, 2; Italian, Russian, Indian (Catawba), 1 each. The tallest man, 6.5, is of Scotch descent: and weighs 188 lbs.

No. 6. Prof. J. C. Nott, of the University of Louisiana, favours me with the following items; forty-two names—a fraction of the medical class—are given: Of these the average age is $24\frac{1}{3}$ years; average height, $5.10\frac{1}{5}$; average weight, $145\frac{1}{4}$. Twelve of them are in height 6 feet and upwards = 1 in $3\frac{1}{2}$. The tallest two are 6.3 inches. Twenty-five are, in part or wholly, English; 14 Irish; 9 Scotch; 4 French; 3 Welsh; 1 Dutch.

No. 7. Prof. Eve, of the University of Nashville, furnishes me with the statistics of the medical graduates of the Tennessee University of that year, 108 in number: Of these the average age is $24\frac{1}{2}$ years; average height, 5.10; average weight, $150\frac{1}{6}$ lbs. There were 36 of 6 feet and upwards in height = 1 in 3. The tallest was 6.5 inches—a Tennesseean, æt. 26, who weighed 209 lbs. Their lineage was English, 31; Irish, 31; Scotch, 28; Welsh, 12; German, 4; French, 4; Indian, 2; Portuguese, 1. With a single exception they were all born in the Southern and Western States.

No. 8. My friend Dr. S. Weir Mitchell collected the particulars of height, weight, &c. of a portion of the class of Jefferson Medical College of the same year: Of 75, taken as circumstances permitted, not selected, the average age was 22 years; average height, 5 feet 9 inches; average weight, 145. Thirteen measured 6 feet and upwards = 1 in $5\frac{9}{13}$. The tallest was 6 feet $2\frac{1}{2}$ inches. The lineage is given as English, 35; Scotch, 25; Irish, 15; German, 13; French, 4; Welsh, 4; Dutch, 2.

No. 9. For the next very interesting table I am indebted to Mr. Hart, one of the class of the Virginia Military Institute, at Lexington, 150 in number, all of that State it is presumed: Their average age is 18 years 5 months; average height, 5 feet 9 inches; average weight, $141\frac{1}{4}$. Thirty-four measured 6 feet and upwards = 1 in $4\frac{1}{34}$. The tallest was 6 feet 4 inches, 21 years old, of Scotch-Irish descent. Their lineage is set down as English, 100; Irish, 52; Scotch, 47; French, 19; German, 5; Welsh, 4; Swiss, 3; Indian, 1.

No. 10. Among the most valuable of the tables I have been able to procure is the following from the Military Academy of the United States, at West Point. I am indebted for it to the courtesy of then Lieut.—now Major-General Schofield, U. S. Army: The whole number of cadets was that year (1857–'58) 211. Of these the average age is $20\frac{1}{17}$ years; average height, 5 feet 9 inches; average weight, $143\frac{1}{16}$ lbs. Twenty-four measured 6 feet and upwards = 1 in $8\frac{3}{4}$. The tallest is 6 feet $2\frac{1}{2}$ inches high; age, 20 years; weight, 160; from Missouri, of mixed blood, Swiss,

Swedish, and French. One hundred and seventy-nine are of the third generation Americans born.

No. 11. From Prof. A. B. Palmer, of the Michigan University, Ann Arbor, I have the stature and weight of a portion of the medical class of that year, 53 in number: Of these the average age is 24½ years; the average height, 5 feet 8⅘ inches; average weight, 150⅘ lbs. Eight measure 6 feet and upwards = 1 in 6⅝. Tallest, 6.2. Lineage: English ancestry is claimed by 44; Scotch, 14; Irish, 12; German, 8; Welsh, 6; Dutch, 5; French, 3; Spanish, 1; Swiss, 1.

No. 12. I have been fortunate enough to obtain some female statistics, not often to be met with in the books. Rev. Dr. Buist, of the Laurens Academy, reports, under his tuition, 83 young girls between the ages of 5 and 18 years: one young lady has reached 21; including her there are 52 whose average age is 14 years and 1 month—the youngest being 12. Of these the average height is 5 feet; average weight, 100⅕ lbs. Under 12 years there are 31 whose average age is 9 years; average height, 4 feet 1$\frac{1}{10}$ inches, average weight, 58 lbs. All were born in the United States; almost all in South Carolina. The three tallest measure equally 5 feet 6 inches; the heaviest weighs 180 lbs.

No. 13. Rev. Dr. Curtis, of the Limestone Springs Academy, tabulates the same number—83. Of these there are 75 at and above 12 years to 18, the average being 14 years 11 months; average height, 5 feet 1⅔ inches. The eldest two, each aged 18 years, measure 5 feet 7 inches, and 5 feet, and weigh 146 and 115. The tallest is 5 feet 8¼ inches; the heaviest weighs 182 lbs. Of the whole number, 56 are 5 feet and upwards in height. Seven of the younger average 10¾ years, 4 feet 4⅝ inches, and 68⅜ lbs. As to the lineage, all are native born, English and Irish blood predominating; then Scotch, Welsh, Italian, German, West Indian.

Compare the two last tables with the following: Cowell gives the stature of female children in Manchester and Stockdale, England—factory girls and others—at 10 years, whether or not in factories, about 3 feet 9¼ inches.

At Laurens, South Carolina, U. S., Buist, of average age 9 years, records the average height of 31 at 4 feet 1$\frac{1}{10}$ inches.

At Limestone Springs, South Carolina, U. S., Curtis, of average age 10¾ years, records the average height of 7 at 4 feet 4⅝ inches.

Cowell sets down girls not in factories, at 14 years, 4 feet 5 inches; factory girls about ⅓ of an inch less.

Harrison gives the average height of girls, from 14 to 15 years of age, as 4 feet 9 inches at Preston, Lancashire; and from 17 to 18 years of age, as 5 feet.

Quetelet, of girls of the wealthy class in Belgium, at 14 years of age, as about 4.4$\frac{8}{10}$ inches; and at 21 years of age, as about 4.8 inches.

Buist gives of 52, whose age is at the average 14 years 1 month, 5 feet as the average height.

Curtis gives of 75, whose age is at the average 14 years 11 months, 5 feet $1\frac{2}{3}$ inches as the average height.

Horner gives measurement of young girls from 5 to 12 years, averaging 9 years, as 4 feet 1 inch, which is but a little below Buist's, stated above, and does not differ much from Curtis', allowing for more than a year.

In Vilvorde Prison, 69 women averaged 4 feet $8\frac{3}{8}$ inches—a stature somewhat under that of South Carolina girls of 15 years.

In Europe there is an observed difference between the upper and lower classes, as regards both height and weight. An obvious reason presents itself in the better hygienic condition of the former; with greater wealth there will be better feeding, clothing, &c., and hence fuller development in every way. Besides this there must be some influence in the lineage; the superior elements in the mingled races, in the "struggle for existence" so long maintained, as well as by force of "elective affinity," acquire predominance.

We cannot affirm the existence, we have not observed it among our people, of any such difference between the rich and the poor; and it will be long before anything of the kind can be established here.

Villermé & Quetelet declare that the country shows a general inferiority of stature compared with the population of cities and towns. If true on the Continent, this will not surely apply to Great Britain. Nor is it so with us. Our town's-folk, it would seem, are smaller than our country people. Our tallest and heaviest men, it will be remembered, are found in our agricultural districts.

Let us extend our comparative view. We have accumulated much information since the time of Haller, who places the average stature of man at 5 feet 5 or six inches.

Quetelet rates it, at 25 years of age, at 65.27 inches—5 feet $5\frac{27}{100}$ inches.								
Danson	"	"	"	66.30	"	5	"	$6\frac{30}{100}$ "
Boyd	"	"	"	67.00	"	5	"	7 "
Liharzik	"	"	"	68.00	"	5	"	8 "

These last tables are from Aitken, and vary much, probably in relevance with the races or nations estimated. Quetelet, rating it the lowest, gives the measurements taken among Belgians and Frenchmen. Liharzik probably has gathered his in the tribes of Middle Europe—Poles, Sclaves, Hungarians, &c. Danson and Boyd, it is to be presumed, offer us, chiefly at any rate, British statistics.

We cannot lay any great stress on the small number of statements authentically made as to the stature of remote and savage races. The extremes are found on the one hand in the Doko and Bosjesman, estimated not to exceed 4 feet 6 inches; and on the other in the Patagonians, who show, as we learn from good authority, a common height of above 6 feet: the tallest seen by the Spanish officers, in 1785, measured 7 feet $1\frac{1}{4}$ inch.

Scherzer in "the Voyage of the Novara," gives 5 feet $6\frac{3}{4}$ inches as the

average height of 147 Maories, their average weight being 141 lbs. The average height of 617 Europeans, chiefly British soldiers, measured at the same time, was 5 feet $7\frac{1}{4}$ inches. The tallest Maorie measured $6.5\frac{1}{2}$ inches. Livingston, the African traveller, mentions his meeting with several natives of 6 feet height and upwards.

Whewell gives some measurements taken at Cambridge University, as averaging 5 feet $9\frac{6}{10}$ inches. Forbes, objecting to the above as "of picked men of 18 to 24 years of age," computes an average of 5 feet $8\frac{9}{16}$ inches. More particularly, he makes the Belgian average $5.8\frac{2}{10}$; the Scotch, $5.9\frac{3}{10}$; the Irish, $5.10\frac{1}{6}$. Against these we place from our table No. 1: Kentucky, 5 feet 11 inches; Texas and Mississippi, 5 feet $10\frac{1}{2}$; and from table No. 6, Louisiana, $5.10\frac{1}{2}$—equal to the highest, the Irish; and from No. 7, the Tennesseeans, 5 feet 10 inches.

Danson offers us an extensive and interesting series of observations upon 4,800 criminals in Great Britain, separating the averages according to age, one hundred at each age noted:—

At 19 years of age the height was $5.4\frac{34}{100}$; the weight, $130\frac{1}{10}$ lbs; the tallest measured 5 feet 11 inches. Compare our Lexington table, No. 9, at 18 years 5 months: The height was 5.9; the weight, $141\frac{1}{4}$ lbs.; the tallest stood 6 feet 4 inches.

From Danson again: At 21 years the height was $5.5\frac{57}{100}$; the tallest measured 5 feet $11\frac{1}{4}$ inches. Our West Point table, No. 10, at $20\frac{1}{17}$ years: The average height was 5.9; the tallest cadet stood 6 feet $2\frac{1}{2}$ inches.

The loftiest stature ever attained in modern times was probably that of one of the Dukes of Brunswick, 8 feet 6; equalled, it is said, also, by one of Frederick's giant grenadiers.

In the "*Book of the Clans*," of Scotland, it is mentioned that "William, Earl of Sutherland, in 1759, raised among the Kennedys of Clare Ulric, a fencible regiment 1100 strong in nine days; the men were so tall that there could be formed no light company; nearly 300 of them were upwards of 5 feet 11 inches in height."

The remarkable size of the members of the Virginia conventions held at different times is thus alluded to by Grigsby: "Washington, the Lewises, the Randolphs, Mason, Pendleton, the Cabells, the Carringtons, Henry, Bland, the Lees, Jefferson, the Campbells, Blair, Tazewell, were, nearly all, full six feet high, and some of them above that mark. Marshall and Monroe were tall. Innis was, probably, the largest man in the Union. Madison was, probably, the only small man among them." These certainly were not, in the physical sense of the term, "picked men;" selected, as they were, for elevation of character and intelligence. Add to them the late illustrious Gen. Scott, who, like Saul, overtopped almost all other men by the head and shoulders.

Perhaps the estimate which would show our North American development in the most favourable light is the proportion of those who rise above

a certain standard. We have nowhere in our European tables such estimate except incidentally. Quetelet tells us that at 19 years of age 3 individuals only were more than 18 decimetres—above 5.10 inches; at 25 years, 6 such; and at 30 years, 13 such, in 900 persons measured.

Now, in our American tables, No. 1 shows 45 in 286 who measure 6 feet and upwards. Of 34 Kentuckians, 19—more than half; Delawarians, 3 in 12; and Mississippians, 4 in 10. We shall find of all ages, from 18 to 30 a much larger percentage of persons above 6 feet in height than Quetelet gives of two inches less. If we add all his numbers together we have but 22 of five feet 10 inches height in 900 measured—little more than 2 per cent., against 206 of 6 feet and upwards in 1,066 measured—very nearly 20 per cent.

In the Army Report of the United States we find

30 in 100 set down from Georgia 6 feet high and above it.

24 in 100 " N. Carolina " "

18 in 100 " Kentucky, Indiana, and Tennessee 6 feet high and above it, and so on through decreasing proportions until we reach New England, New Jersey, Pennsylvania, and New York, 6, 5, and lowest 4.

Hybridity is not, we must infer from the above statistics, necessarily injurious to the human race, as some have ventured to pronounce it. The results depend upon adaptation, affinity. Within certain limits it seems to be congenial and highly favourable to physical development. Beyond these limits it is uncongenial, discordant, and must prove injurious. Of the former we have instances in these United States, in France, and in Great Britain. It is scarcely possible to appreciate the indefinite hybridism of the British people, from whom we derive the largest proportion of our blood, which we go on to mingle still more diffusively. In a paper not long since read to the Ethnological Society of London, by Dr. MacIntosh, he describes and figures the varieties of race clearly distinguishable in Great Britain as 5 in number: 1. Gaelic; 2. Cymbrian; 3. Julian; 4. Saxon; 5. Scandinavian. Dr. Knox expressed his conviction that an element not mentioned by the writer of the essay was very prevalent in Cornwall, Devon, and the North of Ireland—the Phœnician, namely. Mr. John Crawford, F. R. S., President of the Society, believed the great mass of the English people to be British properly, not Teutonic. During the discussion Archdeacon Williams mentioned that, from the breadth of their shoulders, 1,000 Welshmen (emphatically British), drilling at Cardigan, took up as much ground as 1,200 middle country men.

Of miscegenation, amalgamation, uncongenial hybridism, degenerate mixture, the world is full of examples. Scherzer tells us of the wretchedness of the race of Portuguese and Negro in Madeira; the same may be said of mulattoes everywhere; the poor half-extinct half-breeds, of whites and Indians along our frontier, and the promiscuous Mexican and South American peoples.

ART. VII.—*An Operation for the Correction of Inversion of the Ciliary Margin of the Eyelids, connected with Shortening of the Palpebral Fissure: by the Implantation of Integument behind the Outer Portion of the Upper Lid.* By DAVID PRINCE, M. D., of Jacksonville, Ill. (With two wood-cuts.)

THE generally recognized difficulties in the way of removing obstinate entropion and relieving the parts from the condition of trichiasis, in which the ciliæ keep up an inflammation and opacity of the cornea by their contact in the process of winking, are a sufficient apology for calling the attention of the profession to a new expedient.

It is appropriate to make brief references to the pathological condition and to the surgical operations hitherto performed.

Long-continued inflammation of the mucous membrane of the lids results in a change in the character of the membrane and of the subjacent areolar tissue, by the deposit or infiltration of material of imperfect organization. The suppleness of the parts is diminished while their thickness is increased. The deposit of the same character which takes place after acute inflammation, is rapidly and completely removed, so as to leave no appreciable remaining alteration; but a long continuance of the low grade of chronic inflammation, secures an alteration in all the tissues of the membrane; so as in some degree to give it the character of a cicatrix. The same is observed in other parts of the body, and a familiar example is that of the hard and tense integument in the seat of a long-continued eczematous inflammation upon the arms or legs, which has disappeared as a pathological process, but has left a permanent pathological condition.

The contraction which follows long-continued inflammation of the mucous surfaces of the lids results in a diminution, to some extent, of the depth of the fold of conjunctiva as it passes from the globe to the lids, and a slight tendency to incurvation of the cartilage, but the chief cause of the ultimate deformity seems to consist in the sliding of the integument with its Meibomian outlets and ciliary glands upon the ciliary margin of the cartilage, so as to bring a greater or less number of the eyelashes in contact with the globe.

This tendency is aggravated by a contraction at the outer commissure, causing an apparent shortening of the lids by the approach of the external canthus toward the cornea. As the tendo oculi obliges the internal canthus to be always a fixed point, any diminution in the area of the mucous membrane in the transverse direction must manifest itself entirely by the encroachment of the external canthus.

There is, besides, a tendency of the fissure between the lids to shorten at the outer angle, by the same process which, in inflammation of the integument between the fingers, causes an encroachment of the integument upon

the fissure, without a direct adhesion of opposite surfaces. The diminution of the area of mucous membrane tends to draw the integument in between the outer extremities of the cartilages, and to slide the ciliary margin inward. This is probably the reason why in the worst cases trichiasis is usually most troublesome in the outer half of the lid. The existence of this condition more often in the upper than in the lower lid is doubtless owing to the more frequent occurrence of prolonged inflammation in the upper lid than in the lower.

The lids, and especially the upper lid, are thus made not only to irritate the cornea by the rough contact of the ciliæ, but to grasp the globe with too much pressure.

If the cartilages contracted equally with their mucous investment, the tendency to inversion would be very slight.

That the hypertrophy of the orbicular muscle, resulting from excessive exercise in shielding the sensitive eye from light, can have no influence in producing this deformity, is sufficiently evident, from the absence of this tendency in artisans who acquire unnatural power in this muscle in holding magnifying glasses.

Operative Expedients.—1. The ordinary domestic proceeding of extracting the eyelashes, one by one, is the only mode of relief, short of an operation, and this is exceedingly temporary, requiring to be repeated as often as the ciliæ are reproduced.

2. The difficult process of dissecting out the matrices of the ciliæ, one by one, must usually fail from its incompleteness, and if successful, the angular margin of the lid must still glide roughly over the cornea and adjoining conjunctiva.

3. The unskilful operation of amputating the whole border of the lid, including the ciliary matrices, no one would wish to have the credit of having performed.

4. The operation of Celsus, consisting in the removal of an elliptical portion of integument, some distance from the ciliæ, will often suffice, when there is no encroachment of the external angle.

This proceeding is rendered much more effectual by the modification recommended by Desmarres, which consists in removing the strip of integument very near to the ciliæ.

It is difficult to see what circumstances would invite the adoption of the method known as Jansen's, which consists in removing a vertical ellipse instead of a horizontal.

5. Crampton's method modified by Guthrie. A vertical incision is made through the entire thickness of the upper lid, just external to the punctum, and a similar incision, parallel with this, is made about the same distance from the external angle. The flap between the two incisions is then turned up and the upper extremities of the vertical incisions are united by a transverse incision through the mucous membrane only. The flap is then allowed to fall back, and a transverse fold of skin is removed, as in

the operation of Celsus, after which the adjoining edges of integument, along the vertical incisions, are united by sutures, so as to secure a permanent position of the upper portion of the central integument a little higher than that of the undisturbed lateral portions. Then by narrow adhesive strips, applied vertically from the margin of the lid to a sufficient height above the eyebrow, the ciliary margin is attempted to be permanently secured in a position approaching that which is normal. A disagreeable deformity remains, and it must fail in the worst cases, in which there is considerable encroachment of the external angle.

6. Saunder's method consists in taking out a narrow portion of the inferior border of the cartilage, which of course must permanently diminish the width of the lid, and unless a considerable portion of skin is removed at the same time according to Desmarres' modification of Celsus's method, it would seem that the inversion must be made worse.

7. Jaesch proposed, in 1816, a plan, afterward modified by Arlt, which consists in taking out a strip of integument two or three lines in width, two lines above the ciliary margin. The integument below this, including the bed in which the eyelashes rest, and of course including the whole ciliary border, is then dissected up from the cartilage, taking great care not to injure the extremities of this isthmus through which the vascular supply must necessarily come. This portion of integument, including the eyelashes, is then made to glide up, and occupy the place left vacant by the removal of the strip of integument.

Dr. E. Percival Wright, Surgeon in Charge of the Ophthalmic Dispensary at Dr. Stephens's Hospital, Dublin, has advocated this operation in the *Dublin Quarterly Journal* for February, 1865, giving wood-cut illustrations and full explanations.

An objection to this operation is that it does not relieve the shortening of the palpebral opening, upon which the affection, in marked cases, in part depends. The long isthmus of integument may slough, and did in part slough in one of the cases operated upon by Dr. Wright, but the destruction ceased before irrecoverable damage had been done. The outlets of the Meibomian glands are severed in the operation, and must remain permanently obstructed.

8. The next proceeding is one which has been very often resorted to without having assumed any man's name, and consists in making a free horizontal incision through the external angle, to restore the length of the palpebral opening, and in drawing out and retaining in the fissure a portion of the conjunctiva.

This operation is founded in a recognition of the indication, but unfortunately, it always fails in the cases which most demand it. The reason why it fails, is evident from what has been said of the pathological condition. There is no mucous membrane to spare. The deformity itself arises from a deficiency and degeneration of it, so that, if any of it is drawn

out at the angle, the granulation and cicatrization of the surface from which it had been taken, is sure to draw it again within the lids; the yielding skin easily gliding in obedience to the superior force of the mucous contraction.

9. A better plan than this, for the purpose simply of increasing the length of the palpebral fissure, is to pass a silver wire at the place where it is intended the commissure shall be, and leave it there until the track of the wire has become lined with skin, as in preparing the lobules of the ears of girls for wearing ear-pendants, and then to cut through all that intervenes between this orifice and the joining of the lids.

10. *The implantation of integument behind the outer portion of the upper lids.*—In order to meet the indication growing out of the encroachment of the outer canthus, to diminish the closeness with which the upper lid glides upon the eye, and to render the operation of Celsus effectual, the following method is adopted.

From a point in a line passing horizontally through the external canthus, and about the 16th of an inch from the natural position of the canthus in relation to the cartilage, carry an incision downward and inward from one-third to one-half the length of the lower lid, and parallel with its ciliary margin. Make another incision, beginning at a point in the same horizontal line, about one-fifth of an inch further out, cutting downward and inward, and meeting the other incision at its lower extremity.

If the incisions are made by a narrow pointed bistoury, piercing the skin and cutting from within outward, it is best in making the second incision not to bring the point of the bistoury out in the lower end of the first incision, lest the skin should slide over the edge of the knife, by which the flap might be rendered too short. The integument, between the incisions superficial to the orbicularis, is then dissected up as a triangular flap, beginning at the apex below. The flap is then turned up, and its apex is transfixed with a needle attached to a silver wire having also a needle upon the other end. This affords a convenient means of holding up the flap. Care should be taken here, as in all cases where it is expected to escape suppuration, to avoid contusion of the flap by the pinch of forceps. It is better not to use forceps at all in this operation, but to lift the point with a tenaculum, and as soon as sufficient integument is raised, to transfix the flap with the needle, which affords an adequate handle to it.

Then, under the base of the elevated flap, an incision is carried in the horizontal line through the canthus, deep through the fibres of the orbicularis muscle to the upper end of the outer incision. The mucous membrane is then freely incised behind the outer portion of the upper lid, so as to permit the easy elevation and eversion of the lid.

The flap is then doubled upon itself, and drawn under and behind the outer portion of the upper lid, being drawn into its new position by the wire suture previously introduced through the flap. To this end the

points of the needles are introduced behind the outer portion of the upper lid, and brought out through the integument beneath the brow; the entrance of the needles being about a quarter of an inch apart, care should be taken to introduce both needles into the interval made by the internal dissection, that is, between the lines of the undisturbed portions of mucous membrane. The object of this caution is to secure the contact of the areolar surface of the flap with areolar tissue behind the lid, in order to make union possible. The inverted integument, thus comes to occupy the position and to perform the function of mucous membrane. The wire is twisted over a compress for the protection of the skin from ulceration, and it is left in five days or longer.

For the extraction of the silver suture, it is convenient to have put a thread into the loop before drawing it in. After cutting the free ends of the loop upon the skin below the brow, a gentle pull upon the thread, which hangs out at the canthus, readily extracts the loop in the direction contrary to that in which it had been introduced. The two lines bounding the excavation, from which the flap had been taken, are made to meet by a little dissection under the margins, and retained by interrupted sutures.

The nearness to the margin of the lower lid to be observed in making the first incision depends upon the amount of eversion to be secured to the lower lid. If there is no inversion of the lower lid, the flap should be taken from a space more distant, and *vice versâ*.

Fig. 1.

The accompanying illustrations will render the account more intelligible.

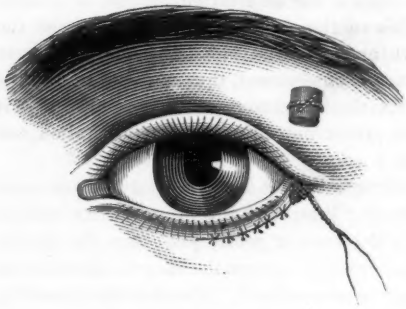
Fig. 1 represents the external commissure contracted by chronic inflammation.

The space from which the flap has been dissected is seen below the lower lid, and the flap itself is seen turned up with a wire passing through. A

dotted line at the base of the raised flap shows the place in which a deep incision is to be made to extend the external canthus.

Fig. 2 represents the operation completed. The flap has disappeared behind the upper lid, and the retaining suture passes out under the brow, and is twisted over a compress. The ligature for retraction of the suture is seen hanging out at the external angle. The integument adjoining the space from which the flap has been dissected has been brought together, and is retained by delicate interrupted sutures of silk.

Fig. 2.



In cases of entropion, which require this operation, it will generally be necessary to perform that of Celsus (fourth in the enumeration of methods), or Desmarres' modification of it, which is an improvement, in order more perfectly to evert the ciliary margin.

The only deformity which is left by this operation is a somewhat unnatural fulness above the external commissure, which, if desired, can be remedied by a subsequent operation, removing a portion of the integument which had constituted the base of the flap.

It has been suggested that modifications of this method may be resorted to for symblepharon, in order to supply to some extent the deficiency of mucous membrane, by implanting the delicate skin of the lids. This is very distensible, so that though a flap at the time of its implantation may seem very small, it is capable, after its adhesion in its new location, of great enlargement.

To remove any deformity which may arise from the increased thickness, where the flap turns in at either the inner or the outer canthus, the pedicle through which the vascular supply was at first maintained may be cut away after the circulation is established through the adhesions in the new relations.

ART. VIII.—*Spotted Fever as observed in Breckenridge County, Kentucky.* By J. W. MOORMAN, M. D., of Hardinsburg, Ky.

BRECKENRIDGE County is hilly and broken, with a soil composed of a mixture of clay and sand; the water is generally "limestone," containing, besides carbonate of lime, various other saline substances. The county is well drained.

Hardinsburg, where the fever first made its appearance, is an inland town of about two hundred and fifty inhabitants, situated on a range of hills somewhat above the level of the surrounding country. There are no swampy lands or pools of stagnant water near the town. Malarious diseases were unknown until within the past three years, and the town has almost always been noted for its healthfulness.

About the first of March, 1866, after an exceedingly damp winter, the spotted fever made its appearance. For some days previously to its appearance a raw east wind had prevailed, and it was observed during the epidemic that new cases always occurred during the prevalence of easterly winds. Without presuming that there is any relation between the two as regards cause and effect, this is mentioned merely incidentally as a matter of fact. Diseases of an intermittent character had been prevailing to an unusual extent during the winter months, and the first cases seemed to partake of their nature.

The symptoms varied; usually, however, there was a distinct rigor, coldness of surface, and absence of pulse at the extremities; pain in one or more of the extremities of a violent character; wild, and at times uncontrollable delirium supervened, with jactitation, startings, and incoherent cries; tonic spasm of the muscles of the neck drawing the head back, and great tenderness in cervical region of the spine. After several hours reaction took place, pulse became full and strong, though rarely exceeding normal frequency; bowels constipated, though easily moved by purgatives. Diarrhœa was rarely observed. There was in most cases intolerance of light, and in some, intolerance of sound; the conjunctivæ injected, and the whole surface of the body acutely sensitive, so much so that the least touch would cause the patient to cry out with pain. Vomiting was observed in some cases, though generally towards the close of the disease. The tongue, at first clean, moist or enlarged, and covered with a white slime, soon became coated with a black dry crust; sordes formed on the teeth; the urine scanty and high coloured and retained in some cases; respiration irregular and laborious. Early in the disease, in some cases, the first symptoms pointing to a grave form of disease are the appearance on the face, thorax and extremities of petechial spots varying in size and number; in some cases there are but a few spots and these rather obscure, at others, the whole surface was covered. In a few cases this eruption was absent until after death, and in one or two was not observed at all. Should the patient survive the fifth day, the disease assumes a low typhoid form, though there is no regular continued febrile phenomena. Paroxysms of pain of a neuralgic character were present, appearing in different parts of the body in quick succession; the extremities become contracted. Dilatation of pupils and blindness was observed in one case. Paralysis of optic nerve was present in a minority of cases. Relapses were common, and the greatest care was necessary to present them.

Death took place in the earlier cases from asphyxia; in the more protracted ones from asthenia. Duration varied from a few hours to months; the most malignant cases survived but a few hours, and generally those who survived the first five days lived thirty or forty days or even longer.

No age or sex was exempt, though chiefly boys between the age of five and fifteen were attacked. The three cases that recovered were all females. A negro woman aged sixty was attacked, and died on the tenth day. Of the fifteen cases in this town, eight died within the first five days, and three recovered. One case survived fifty-two days and died. Of the recoveries, one recovered in a few days, the other two lingered for three months.

But little is known of the cause of this terrible scourge. The beginning of the epidemic and its being confined to the town and vicinity, would naturally lead us to look for some local causes. The only one discoverable was that the drains of most of the cellars in the town being obstructed the water remained stagnant under the dwellings; this may have been one of the causes. It was preceded and followed by very intractable cases of intermittent fever; the prodromes of the two were so very nearly alike as to lead one to suspect a malarious origin, but quinia exercised no influence whatever over the spotted fever.

Whatever may be the local origin of the disease, the cause of the morbid phenomena must be the presence of a specific poison in the blood arising as does the poison of typhus, and differing only in the mode of propagation. The disease itself has been regarded by many as a malignant form of typhus, but the cases which came under my observation were of a different character, and though they presented many of the distinctive features of typhus differed from it in many respects. It is essentially an inflammation of the posterior and basilar portion of the brain and spinal cord and their meninges. On a *post-mortem* in one case, made seventy-two hours after death, which took place on the thirty-fifth day, we found the dura mater dry and adherent to the calvarium at different points. Beneath the arachnoid membrane the greater portion of the surface of the posterior portion of the brain was covered with a deposit of lymph, and dots of pus were found along the line of the vessels. On attempting to remove the brain, about three pints of turbid serum escaped. The brain was softened in circumscribed patches; the medulla oblongata and pons Varolii were in a state of softening.

The spinal cord was only examined in the cervical portion, and was covered with a deposit of greenish-looking lymph.

The right side of the heart was filled with dark grumous blood, two or three shreds of fibrin in the left ventricle. Stomach and bowels healthy; kidneys normal; spleen rather enlarged. Gall-bladder distended to its utmost; the *ductus communis choledochus* in a state of inflammation and impervious. Whole surface of liver of a dark greenish colour, from the exudation of the colouring matter of the contents of the gall-bladder. Substance of liver healthy. Lungs healthy.

The various plans of treatment laid down in works on the practice of medicine were tried without a very favourable result. Bloodletting and the general antiphlogistic treatment were tried, but abandoned. Opium and stimulants were a little more successful. Opium, in the cold stage, I consider one of our best remedies; large doses are well borne, and may be given at short intervals; I have given one-fourth of a grain of m[illegible]hia every two hours for twenty-four to a boy twelve years old with good results. It should be given for the effect, and without regard to quantity. Quinia was used in several cases, but without benefit. Iodide of potassa was used at first, but abandoned. Stimulating applications to spine are useful during the cold stage. I used equal portions of aqua ammonia and tincture of capsicum rubbed over the whole length of the spine.

Permanganate of potash was beneficial, given in doses of from one-eighth to one-fourth of a grain frequently repeated. During the stage of excitement arterial sedatives were used, and of these the best is tincture of aconite root in large doses; veratrum viride is a valuable remedy of this class. In the chronic cases, muriate of ammonia and permanganate of potash are the medicines upon which I place most reliance. Bleeding is hurtful in most cases. To relieve the violent neuralgic pains in different parts of the body liniments containing chloroform and aconite, dry cupping, and friction with mustard and vinegar have usually been efficient. Intercurrent affections were treated on general principles, taking care always to sustain the powers of life by a sufficiency of liquid nutriment given in small quantities at short intervals, and when there was much debility alcoholic stimulants were used in quantities proportioned to the wants of the patient.

Under the most judicious plans of treatment the majority of cases proved fatal, and often the results of the same treatment in different cases were very different.

ART. IX.—*On the Changes of Type of Diseases.* By R. E. HAUGHTON, M. D., of Richmond, Ind.

CHANGE is written on all things temporal. If we look back but a few years, we shall find that very remarkable changes have taken place in the history of disease and its treatment—that the forms of disease which were called sthenic, attended as they were by a high grade of arterial excitement, are now superseded by the asthenic forms, in which all the symptoms are modified by a strong tendency to general debility from the very commencement of disease. By the sthenic condition is understood the inflammatory reaction or excitement, attended by a burning skin, injected eyes, intense headache, flushed face, wild delirium, and throbbing pulse; in which conditions the physicians of former days used the lancet freely till relief was obtained. This condition has been replaced by the asthenic, which has

manifested itself more fully since the advent of cholera in this country—1832, 1853. In this asthenic type of disease, debility of the heart's action appears from the first, and often requires active stimulation to support the patient, conjoined with nutrients. This is no delusion. Why is this remarkable change, and do such changes present themselves to us in our visits to the bedside? The history of medicine in the past fifty years affords ample evidence that medical opinion and practice have passed through radical changes, and that the treatment of disease, as we see it to-day, is vastly different from what it was at the former period.

Contrary to this view, however, Dr. John Hughes Bennett, of Edinburgh, in a work entitled "Clinical Lectures on the Principles and Practice of Medicine," declares that the diminished employment of blood-letting and other antiphlogistic remedies of late years does not arise from a change in the type of disease; but that the present advanced state of pathology and diagnosis has proved the former treatment to be erroneous; and he therefore concludes that inflammation is the *same now* that it was in former years. That antiphlogistic treatment is not used to the same extent, or is hardly used at all in the forms of disease of to-day, is not controverted; and that the indications we find most generally do not demand its use, is quite as well established. That medical men of to-day treat fevers and inflammations by agencies which they had never thought to use thirty and forty years ago, and are still the successful physicians they were, is not to be doubted, and it seems to me that were we to deplete the diseases of this day as was done formerly, we should lose many more of our patients; proving so far that depletion could not be borne now as it was then. To sustain the proposition of a change in the types of disease it is only necessary to examine the history of disease in our country during the various cycles of the last half century.

In looking back as far as 1807, and from that time to 1820, we find an epidemic of typhus fever prevailing, often complicated by pneumonia, which Dr. Wood says was erroneously called pneumonia typhoides, as it was a complication of epidemic typhus fever. The treatment, both in fevers and inflammations was at the time of the irruption of the typhous epidemics decidedly antiphlogistic; yet when a change occurred in the type of the disease as it did in 1812–13, the consequences of such treatment were fatal. In Philadelphia the celebrated Dr. Parrish, a young man, at that time, saw these unfortunate results of treatment, and treated the epidemic by active stimulation and support, and with the result of saving nearly all his cases. "So fatal was the treatment by copious bleeding that professional as well as popular opinion received a set against it." (Dr. Wood.)

Here at once was a decided change in treatment, corresponding to the type of disease which had most evidently changed from the more sthenic and prevailing types to one most decidedly asthenic, and which modified all

the then prevailing forms of disease. The history of the various typhous epidemics shows that typhoid and not typhus fever has been the prevailing fever of the New England States, and though not confined to such geographical limits, that fever was not known in the Western States. The malarious types of fever were alone known in the early settlement of the country, except only isolated cases of typhoid fever occurring in persons who had come from the East. For twenty years back, epidemics of typhoid fever have prevailed over large districts in the West with considerable severity, but a diminishing mortality. When I commenced practice, in 1850, the first epidemic of typhoid fever was prevailing in a certain locality in Indiana, and since that time I have seen three epidemics of the same disease. Malarious fevers also prevail to a certain extent every year; bilious fever being regarded the common type of fever in the autumn. As time has passed on, bilious fever has become rare in the same region, and intermittent fever as well as remittent, when they occur, are influenced by some depressing agency, which sometimes converts a truly periodical fever into a continued form. An opinion consequently prevails that typhoid fever has a tendency to replace intermittents and remittents, as these diseases are growing more unfrequent, and typhoid fever is now in many places in the West the predominant fever. Here we have a blending of types presented to us, beginning as malarial and ending in typhoid; to such blendings of types Dr. Woodward has given the name of typho-malarial, which exactly expresses what we observe in the history of such cases. Dr. Austin Flint, now of New York city, says:—

"That typhoid fever has to a great extent superseded the remittent form, and in a brief enumeration of the distinctive traits of remittent, typhus, and typhoid, published by us in this journal [*Buffalo Med.*], we mentioned this as a sentiment generally entertained by the profession in this region." He says further: "We think there cannot be a doubt that a striking change has taken place within a few years past, and that typhoid fever from having been, to say the least, of unfrequent occurrence, has become frequent, and is becoming more so, remittents diminishing in frequency after the same ratio."

These views are corroborated by some conclusions to which M. Boudin has arrived more recently. He says "there exists an antagonism between typhoid fever on the one hand and intermittent fever and phthisis on the other." In the ten years which are past, and in which we have been presented with an ever-varying succession of disease, the typhous element seems to have predominated, and to control both the inflammatory and febrile types of disease, complicated, as these last frequently are, by some local inflammation, in all of which prostration is the common attendant. Since the advent of epidemic cholera in 1832, up to the present time, we have had conditions in disease which forbid the treatment so commonly resorted to prior to that period. Before 1832 the antiphlogistic treatment was practised; but soon afterwards cathartics were found to produce great disturbance where formerly they were used with benefit; and even to this day they are not

nearly so much needed, nor even indicated, except those of the very mildest kinds. Intestinal mucous irritation is set up as the result of such practice, and prostration soon manifests itself. Blood-letting is abandoned, except by men who are averse to improvement, and who shut their eyes to the results of a more enlightened experience, based upon the changes in the types of disease. Another proof of the changes in the types of disease is afforded by some of our epidemics during the last five years. We have had, since 1860, an epidemic of diphtheria, and to some extent of erysipelas, also cerebro-spinal meningitis or cerebro-spinal fever, which we have found exhibiting evidences of prostration; and the last disease I have seen begin as cerebro-spinal in all its manifestations, and terminate in well-marked typhoid fever; the spinal and inflammatory symptoms subsiding, and the patient recovering slowly, as from typhoid fever. There was the same redness of tongue, the tender and tympanitic abdomen, the diarrrhœa and rose-coloured spots of typhoid fever, not those of spotted fever so-called. Dr. Pierce, of Mechanicsburg, Ohio, in a paper published in the *Lancet and Observer*, in speaking of an epidemic of typhus, typhoid, and cerebro-spinal fever occurring in his community, discusses the community of their origin and identity of character. I have no doubt of the truth of his observations, as I know very well in this region also that cerebro-spinal fever frequently merges into a genuine typhoid fever, and I believe that there is a community of origin, cause and effect, bearing their true relations in these three forms of disease, capable of being converted from one into the other, or, in other words, convertible forms of disease. It is true that with us we do not see the genuine typhus, as described by British writers; but it is believed that cerebro-spinal fever is a modification of the genuine typhus, and we have typhous manifestations which are known to belong to the group of typhous diseases. Dr. Kersey, writing on the same subject, says, "of cases he had seen, reproducing, in almost every feature, the mental impression made a quarter of a century ago by watching the progress of a few cases of typhus or ship fever." These are not sthenic but asthenic diseases, and require a very different treatment from what was used when disease presented high arterial excitement. According to Dr. Hughes Bennett, who maintains that inflammation is always the same, the changes presented when disease is left to run its course undisturbed cannot be explained, for cases then recovered under the treatment which if applied now would prove certainly fatal in a large majority of cases. This is accepted as a fact, and I am disposed to think that there is another element not sufficiently taken into account. The force of the circulation has been carefully estimated in sthenic and asthenic diseases. But, if inflammation is always the same, why do we find now such complete prostration attendant, if the causes, conditions, and elements which enter into it under all circumstances are precisely the same. In the sthenic forms, when bleeding and purging were freely practised, such rapid and overwhelming

debility did not occur as do now, when we have asthenic forms of disease. The reason for such differences is, I think, to be found in the influence which the nervous system exerts upon the type of the disease and its force. All diseases, except traumatic ones and those produced by poisons, have their first lesion in the nervous system. Lesion of enervation, as Dr. Southwood Smith wrote, so I regard the first lesion as that of the nervous system, and as the agency, or poison, or whatever it may be, which produces disease, may exert more energy or power in one case, so we may have the ever-varying conditions of sthenic or asthenic impressed by the vital forces as they are influenced by a more or less violent and depressing cause. Lesion of circulation, lesion of nutrition and secretion next in their relations are disturbed, and there occurs just what we are witnessing as the epidemics come and depart. The testimony of morbid anatomy is adduced by Prof. Stokes, who says:—

"Having had full opportunity of seeing and examining the recent examples of diseased structure, amounting to nearly 3,000 specimens, the products of the various hospitals of this city (Dublin), and this result is remarkable that the specimens of acute disease have had a very different character from that commonly met with in Dublin, between 1820 and 1830. As a general rule, these specimens all showed appearances indicative of a less degree, of pathologic energy."

This is sufficiently full to indicate changes in the vital conditions which influence the type of disease. Disease is but a condition of tissues, a departure from their physiological state, and there is some rule which acts, not only to develop but to control, that tissue in its departure from its normal standard. Now either the vital endowments of the tissues are changed, or there would be no change in the tissues examined after death, if the varied influences which operate to produce and change disease were the same as observed under the sthenic types. But these vital endowments are changed, and the pathologic changes are not the same. In asthenic inflammations, the effusions were often copious and hemorrhagic; the inflamed surface of the tissue highly reddened; while now in pneumonia, as I saw in a recent case, the lung was of a purple or livid colour, *not red*, the effused lymph a grayish pasty mass, forming weak adhesions to adjacent surfaces; in other places, owing to the feeble energy of the inflammation, the effused products were in a pulpy or semi-fluid condition, having a strong tendency to form pus. This was in a case of pneumonia, evidently of the asthenic form, in which, by vigorous stimulation and support, I could not change the inflammation or its results. The same story is true of serous membranes. The firm bands of adhesion which used to be met with in pleurisy, in the peritoneum and other serous tissues, are not found now, but in their place are seen serous or bloody effusions; the lymph which was deposited does not become organized, but is thin and somewhat

transparent, and collected into the serous cavities, thus producing embarrassing accumulations of fluid, with no tendency to be removed, but increasing as the disease progresses, impairing the vital tone of the patient. As Dr. Stokes says again, serous, or sero-fibrinous effusions tinged with coloring matter, replaces the old results of sthenic inflammations, and tallies exactly with the change in the vital character of the disease. Now let us look at the results of practice and the influence of remedial agencies under the conditions of disease, and see if there is not something which influences the same results. Formerly, when the more sthenic forms of disease prevailed in the country, blood-letting, cathartics, emetics, nauseants, and a system of starvation having a decidedly reducing effects, were followed in the treatment of fevers and inflammations, and there were no alarming symptoms; but after a long, protracted sickness, slow convalescence was eventually established. This was regarded as success, and the patient as eminently fortunate. At various periods of time, we have seen less and less of the sthenic types of disease, and as far back as 1842, the typhous element, the zymotic causes of disease began to invade the Western and Southwestern States, and the periodical fevers and inflammations governed by the influence of a periodical law, were gradually displaced by a type of adynamic fever, and the inflammations when they occurred, either as original diseases or as complications of the fevers, were not influenced or successfully treated as disease had been before. Quinia, which was known as the great agent in the cure of periodic fevers, did not cut short or benefit these diseases, but was often positively pernicious; mercury was seldom required, though often used to the serious detriment of the patient. Purgations sometimes induced an early prostration, as did also tartrate of antimony, as used in the typhoid pneumonia. Sometimes in the early stages of these cases, the depleting plan was resorted to; but when prostration was observed, the whole plan was changed to stimulating and supporting—often too late for success. The idea of change of type did not, I conceive, influence the minds of the profession sufficiently to lead them to estimate the vital forces as acted on by a zymotic poison, absolutely depressing in its influence on all. This, as well as not knowing the full value of remedies, in their proper time and place, was a great defect.

The first epidemics of typhoid fever and typhoid pneumonia were very fatal, in many localities in the West; but experience has improved, and the influences which operate to produce certain forms of disease being better known, treatment is more successful than formerly. These important changes are not due to an improved pathology, but changes of treatment, necessitated by the changes in the type of disease. As evidence of the change which the type of fever undergoes, Dr. Tweedie's report for the year 1845 shows the low form of disease by the large quantity of stimulants demanded. "He states, that in the epidemic of 1843, when eleven hundred patients were admitted into the London Fever Hospital, the quantity of

wine administered was about eighteen hundred ounces, and sixty ounces of brandy, while the next year, not half the number were admitted, and they consumed fourteen hundred ounces of wine and seventy-six ounces of brandy, besides other stimulants."

This evidence goes far to show that medical men had observed the change, and were acting upon that knowledge; and that, also, this change of type did not belong to the Western World, but had been observed in Europe. Now Dr. Bennett declares that the diminished employment of blood-letting and other antiphlogistic remedies, of late years, does not arise from a change of type, as supposed by Drs. Allison, Christison, Watson, Stokes, and many of the profession, but that the present advanced state of pathology and diagnosis has proved the former treatment to be opposed to a sound pathology. This proposition does not explain the fact that men scattered over the Western States, isolated as they often are, have not improved their knowledge of inflammations and the treatment of them, until the failure of remedies aroused them to the necessity of a change in the treatment, to meet the existing conditions of disease. We admit progress, but not in the same sense with Dr. Bennett. Dr. Parrish was not a generation ahead of his cotemporaries, when he adopted the stimulant plan of treatment in the epidemic typhus of Philadelphia in 1812 and 1813. It was not his superior knowledge of the forces of disease, but the observation of facts, combined with tact, which built for him a reputation. So it has ever been with medical men. The recognition of a medical fact and its adoption leads to success, where failure stood in the way before. This is the progress which medicine has made through past years, and each successive generation becomes the depositories of the experience of the past for the benefit of the future. To be satisfied that changes in the types of disease do occur, we have access to all the sources of evidence, as to the nature of disease by its study in the past, as well as the present, and in the pathological changes observed after death, and in the effects of therapeutic agencies. We may further quote the evidence of eminent medical men upon this question.

Dr. Watson says: "I am firmly persuaded by my own observations, and by the records of medicine, that there are waves of time, through which the sthenic and asthenic characters of disease prevail in succession, and that we are at present living in one of its adynamic phases." Dr. Stokes says, after summing up all the sources of evidence upon the nature of disease: "Looking at the question from any one of the sources of evidence, we come to the conclusion that the doctrine of a change of type is a true one, while if we take all the facts, and observe how they point to the same conclusion, we must, to use the words of Dr. Alison, 'Accept the change of type as an ultimate fact in the history of diseases.'" It seems to be true, that of the very many causes of disease which I have no doubt have power to develop new forms or types, of which we may have had but little or no experience, that they travel from one portion of the earth to another, and

generally from east to west, around the world, but simply proves what Dr. Watson has said, that there are waves of time, and I had like to have added periodic time, in which different types of disease prevail. These causes are evidently capable of inducing disease, and of influencing the character and type of disease, so that all forms of disease exhibit a certain degree of conformity to a controlling law, which is the law of the epidemic disease. "Dr. Robert Lawson, from investigations which are published, deduces a law, showing that a series of causes originate, or become apparent in the southern hemisphere, and travel northward with much regularity." This influence he designates more properly "pandemic" than "epidemic," and in conformity again with the language of Dr. Watson, "he calls these successive waves pandemic waves." Waves of disease upon the waves of time, and there is no doubt that very wide and radical changes have been presented in the successive waves of disease, from the higher and more active types to the lower or more adynamic types. Again, the same writer says: "These casual eruptions of *new forms* of disease have always taken place during the passage of a pandemic wave, and therefore concludes that this cause determines the occurrence of disease where it passes, while the forms or types are influenced by the meteorological, malarial-hygienic or social conditions of the population. He admits, however, that the facts of disease lead to the conclusion that the epidemic or pandemic cause can determine the resulting form or type of disease, though local and temporary causes may determine a different form yet impressed by the great law of epidemic influence." So it has been in the diseases of endemic origin; they are impressed by a more powerful law, and show its existence throughout all its phases. We might adduce more evidence were it needed upon this question, and we now simply say that we have travelled over all the sources of evidence, no doubt in an imperfect manner, yet it seems to us with sufficient bearing, upon the question at issue. I regard the acceptance of the facts in this paper as necessary to the proper comprehension of diseases of this era.

[Dr. FREDERICK J. BROWN, of Rochester, Eng., in a letter to the Editor of the *Medical Times and Gazette* (Aug. 4, 1866), gives the following as "an unanswerable argument" in favour of change of type:—

"Let me say that country labourers that used to be bled every spring thirty years since found themselves a few years later fainting after four ounces, whilst they formerly could lose sixteen ounces and walk miles without any sign of faintness. These are cases of people in health: therefore they are free from the fashions of sickness—treatment. The younger relatives and neighbours of these countrymen were similarly affected by bleedings: therefore it was not a case of men growing older and not tolerating bleeding from that cause."

Connected as we have been with the profession for half a century, we can testify from personal observation as to the change in type which diseases have undergone within that period; and of those who remain of our early contemporaries, we have not conversed with one who has not concurred with us as to this fact.—EDITOR.]

Art. X.—*Memoranda of Cases.* By Richard McSherry, M. D., Prof. Principles and Practice of Medicine, University of Maryland.

Case I. *Gunshot Wound of Femur.*—On the 5th of August, 1862, I was called to see Capt. H——, U. S. 4th Artillery, in consultation with Doctor (now Professor) R. Bartholow, and other army surgeons, at Fort McHenry. Capt. H. had a compound comminuted fracture near the middle of the femur, made by a canister shot in an engagement near the city of Richmond, in the latter part of June. There was free suppuration from the wound at the time that I saw him, with much prostration. Stimulants were freely used in accordance with the necessities of his condition, and Surgeon Bartholow changed the cumbersome splints which had been previously applied for Prof. N. R. Smith's *anterior splint* (now much better known than it was then) which the patient declared, in his own strong terms, was like removing one from hell to heaven. The relief given by the change of splints was indeed very remarkable. From that time until the last moment of the patient's life, he expressed daily the comfort and satisfaction given by the anterior splint.

From my experience and reading in military surgery, I had no hope that the life of this brave officer would be saved by any treatment, since previously to the late great internecine war, it was a fact, with scarcely an exception in the records of military surgery, that gunshot wounds of the femur above the lower third resulted fatally. This case, unfortunately, was not an exception to the established rule. I saw him again in consultation one week later, and found the wound still suppurating freely; no union in the fractured bone, though "*there appears to be a considerable casing of callus,*" the patient becoming more and more emaciated, the pulse feeble, and about 110 in the minute. Supporting treatment was continued. On the 13th August, the patient was removed from the Fort to the Baltimore Infirmary, to be nearer to his friends and kindred. On the 14th, an immense sinus extending up towards the trochanter was laid open to give vent to a great accumulation of pus. The operation gave but little pain, but a tendency to sinking was manifest, which was met by the free use of stimulants. Some blood was lost also from the division of a small arterial twig, which was soon secured, but the patient was thoroughly exhausted, and he died on the morning of the 15th, at 5 o'clock, there having been some slight reaction brought on during the night by the free use of stimulants. Notwithstanding the irritative fever under which he suffered, his faculties were unclouded until he was actually dying.

It was my wish to have a thorough post-mortem examination. We had not heard as much at that time of *osteo-myelitis* or *medullitis* as we have since; but I had in memory some of Cruveilhier's pathological investigations in analogous conditions. More than a half century ago, this pathologist examined the medullary membrane of the long bones of subjects who died with typhoid symptoms after amputation. He found that phlebitis

of the bones and visceral abscesses were frequent results of wounds and operations involving these bones. The whole medullary membrane was sometimes found in a state of suppuration. The general blood-poisoning supervening with phlebitis, induced a low fever and finally death.

In the case in question, I obtained permission with some difficulty to make an examination of the seat of injury only, shortly before the time of interment. Assisted by my brother, Dr. H. F. McSherry, Surgeon U. S. Navy, I examined hastily the part injured. We found fracture with great comminution, and a large depot of sanious pus completely covering the ends of the bone. There was no attempt at repair; no *callus*. What had appeared to be during life a casing of callus was nothing more than the *disjecta fragmenta*, the upheaved and displaced fragments of bone offering an arrangement or derangement, which is probably often mistaken for callus. It was doubtful during life whether the ball was retained in the limb or not; but we found none. The patient indeed had always assured us that the ball had fallen out by the orifice of entrance.

Case II. *Phlegmasia in the Right Arm of a Male Subject.*—A young man consulted me on the fourth of March last with a great tumefaction of the right arm involving the whole limb from the shoulder to the fingers. The affection was of spontaneous origin, and at that time of nearly three weeks' duration. The skin of the arm was cyanosed; the superficial veins were all distended and varicose; the mammary and scapular veins were notably distended. No pulsation could be felt in the right subclavian artery, but a feeble pulsation could be detected, by careful observation, in the humeral and radial arteries. The heart's action was quick and excited; otherwise the patient appeared to be in perfect health. Auscultation and percussion revealed nothing morbid, although the sounds were rather obscure on the right side of the chest, owing probably to the subcutaneous infiltration which obstructed the usual sounds. There was undoubtedly some deep venous obstruction, but the seat or cause was not detected.

I gave the patient a combination of equal parts of iodide and bicarbonate of potassa (gr. v of each four times a day), and directed active frictions to the arm of camphorated liniment with the addition of a portion of oil of cajeput. There was no rapid change in the progress of the case. Examining the patient on the 16th of the month, I found tumefaction, and pain upon pressure, in the axillary glands. As the heart's action continued to be unduly excited, I added gr. j of p. digitalis to each dose of the alterative. From about this time there was a gradual but steady amelioration of symptoms. The tumefaction in the arm, shoulder, &c., abated, the veins became less distended, the skin lost the deep blue tinge, and the heart's action was gradually reduced. When I saw the patient last on the 19th of April, he said he was well, although the arm was still somewhat above the normal dimensions. The only memorable fault was the absence of pulsation in the subclavian artery, while the pulsation in the arteries of the arm was readily perceptible, though not in full force.

Case III. *Vesico-urethral Neurosis.*—On February 1st, of the present year, I was asked to see a married lady, æt. forty-eight, for severe suffering

in the act of micturition. She was somewhat anæmic, though not otherwise in bad condition. As she was costive, I directed a mild aperient and rest in bed, supposing that prolapsus uteri, with which she suffered occasionally, was a cause of irritation and pain about the neck of the bladder. When I saw her again, after the expiration of a few days, I found her distress not relieved but increased. She then informed me that a week previously to my first visit, she had made a day's journey in a railway car in which she had no opportunity to relieve her bladder, and that after reaching home, from the distension and loss of power in that viscus, she was unable to evacuate it for some hours subsequently. This appeared to explain the present disorder. There had evidently been a temporary paralysis which was now followed by hyperæsthesia. I examined the womb, which was but slightly displaced, and replaced it. I directed a combination of spt. eth. nit. and tinct. belladon. in moderate doses, which, upon a fair trial, gave no relief. The pain continued to be intense, and was most severe in the act of, or immediately after, micturition. As pain of much the same character is sometimes caused by a vascular tumour at the orifice of the urethra, I explored this region carefully, but there was no tumour. I also made pressure upon the bladder *per vaginam* and through the hypogastric walls. No pain was produced by the pressure. The spontaneous pain was growing worse day by day; the patient lost appetite and was suffering at all times either with intolerable pain or with the apprehensions of its speedy return. Meantime the urine was scant and muddy, being loaded with lithates. To give her temporary respite, I ordered at night a suppository consisting of gr. iiss, p. opii, in ol. theobrom. ʒj. This gave decided temporary relief, but produced considerable constitutional disturbance on the following day, when withal, the pain recurred as usual. I was doubtful, indeed, whether the treatment by belladonna and opium might not increase the dysury, notwithstanding the temporary relief given by the latter. It appears to be certain that these agents, notwithstanding their partial antagonism in some respects, act in a similar manner upon the bladder. (*Mitchell, Keen, and Morehouse*). How far they may be relied upon as mutually antidotal in cases of nerve poisoning is yet, in my opinion, very far from being settled. My doubts upon this matter are not derived from the views of such men as Ainstie and Brown-Séquard, but are rather based upon my own observation, while they are enforced and sustained by the observations of these distinguished gentlemen. Not to digress, however, upon this interesting subject of research, I may say that my patient did not improve. I gave her diluent drinks freely, with the addition of bitart. of potassa, of tart. soda and potassa, &c., without any benefit. Micturition was frequent with intense pain; urine scant and cloudy, with neutral reaction. The pain for many days appeared to be directly connected, as it was, indeed, with the act of micturition; but in the course of some weeks there was an evident daily exacerbation about the middle of the day. This gave an indication for decisive treatment. Before regular periodicity was evident, I had given *inter alia*, quinia, and blue pill in combination, with little influence. I now gave the same remedies, increasing the quinia, and adding sulph. ferri and p. scillæ, the latter as a diuretic, since the whole amount of urine passed daily was always very small. The pain began to abate under this treatment, but the remedies became offensive to the stomach, and, as the physiological, as well as therapeutical, influence of the quinia was apparent, I suspended the use of the combination and directed capsules of balsam of copaiba and

cubebs with an occasional opiate suppository. There was by this time decided improvement, but still there were occasional severe, even excruciating, recurrences of pain. On the sixteenth of February, according to my notes, there was a terrible recurrence of pain, lasting from three to eight o'clock P. M. It was met by hot fomentations over the hypogastrium, and gr. ij of opium in suppository. On the following morning I directed ℈j of quinia, in broken doses, and gtt. xv of phosphoric acid in water, every three hours. After the use of the acid there was some increase of pain, but the urine gave acid reaction to test-paper. The phosphoric acid was then suspended. During all this time the bladder and womb were free from tenderness to touch, and there was no pain in the region of the kidneys and no fever. I determined, among other expedients, now to dilate the urethra mechanically, and introduced and left in the bladder a silver catheter, that the urine might pass through it instead of touching the mucous membrane of the urethra. The introduction of the instrument gave pain, but diminished to some extent the pains in micturition. It seemed to cause pain, however, in the region of the kidneys and loins, where none had been felt previously.

Dr. Handfield Jones, under the head of *Neuroses of the Urinary Organs*, speaks of a lad in whose case irritability of the bladder was attended not only with very frequent micturition, but with a greatly increased flow of urine, which "was two or three times as copious as in health." This he explains by saying that "the vesical hyperæsthesia in this instance seems to have extended to the renal nerves, and to have given rise to the increased flow of watery urine." In the case under my care, the flow of urine was diminished in aggregate quantity throughout, and there was no manifestation of sensitiveness about the kidneys until after the use of the instruments, a sound, and a catheter. On the 24th of February, I find that I was using capsules of bals. copaib. and quinia, on alternate days. Severe pain was abating, but there was then a sense of local soreness in the hypogastric region which was met by an epispastic and warm cataplasms. The blister had a very good effect.

On the 10th of March, according to my record, the patient was still suffering with occasional violent paroxysms of pain in the bladder and urethra, coming on about midday. The treatment consisted in opiate suppositories during the paroxysm, and ℈j of quinia daily, or every other day, alternated with doses of ℈j of subcarbonate of iron. A blister was reapplied to the hypogastrium. The patient was frequently under the full influence of the quinia, and the amendment was from about that time steadily and permanently progressive. The treatment was continued until the 24th of March, when she complained of distressing constipation. I directed ol. ricini by the mouth and in enema, the use of which was followed by stools hard and black with the contained iron. The patient then being nearly well, I merely directed ten drops of the muriated tincture of iron after each meal. Her recovery was soon complete. Since that time she had an attack of facial neuralgia, due to exposure to a cold and a bad tooth, but her health is otherwise as good as it was before the attack of the sufferings of which I have given but a very faint description.

Baltimore, May 10, 1866.

ART. XI.—*Rupture of the Uterus—Abdominal Section—Subsequent Pregnancy and Safe Delivery.* By EDWARD WHINERY, M. D., of Fort Madison, Iowa.

ON the 28th of March, 1865, at eight o'clock A. M., I visited Mrs. S., of Niota, Illinois, a healthy Irish woman about 37 years of age, who I was told was taken in labour about ten o'clock A. M. of the 27th. The first indication she had of approaching labour was the escape of the waters, soon after which regular pains supervened, and an ignorant midwife was summoned to attend her. Labour progressed regularly until about seven o'clock in the evening, when it was expected that the child would be born in a few minutes. She was seized at that time with severe burning, lancinating pains, or stitches as she called them, throughout the abdomen, and the expulsive pains immediately ceased. I found her sitting in a chair leaning forward at an inclination of about forty degrees and very unwilling to change this attitude. Her pulse was 110, irregular or fluttering; the countenance very anxious and pale; the skin cool and clammy. It was with difficulty I could induce her to assume a position convenient to make an examination per vaginam. I, however, caused her to be held at an inclination of about forty-five degrees, and passing the digital finger of the right hand into the vagina, and the left over the abdomen, I found the head of the fœtus resting well down on the perineum, but by pressing firmly against the head with my finger it ascended above the superior strait, and the whole body could be distinctly felt through the walls of the abdomen, she being of spare habit. The motion thus given to the fœtus very much increased the lancinating pains, and she cried out, "These stitches will kill me." My diagnosis was rupture of the uterus, and I informed her and her friends that her condition was very precarious. The poor midwife said she did the best she knew. She tried to give her "Mutterkorn Thee" (ergot), but the stomach would not take it. The night was very dark, and the husband and his friends were afraid to attempt to cross the Mississippi in a row boat, as it was very high, with much drift-wood floating. She therefore spent the night in applying new corn whiskey to the abdomen.

I allowed the patient to resume the attitude first mentioned, returned home for my instruments and an assistant. Dr. J. C. Blackburn accompanied me. At 10 o'clock A. M., when we arrived, no change had taken place in the patient. My friend Dr. B. thought, from the visible physical appearances and my representation of the case, that my diagnosis was correct, and we soon agreed upon the propriety of making the abdominal section. Dr. B. administered the chloroform while I was preparing other matters. We placed the patient on her back on a table, and I made the incision on the right of the umbilicus, about six inches in length, through which I removed a large male child (dead of course) and the placenta, both being entirely above the uterus, which was well contracted down into the pelvis. There was very little appearance of hemorrhage. The rupture was in the fundus from the anterior to the posterior wall. The edges of the wound were now brought together by sutures of silk, taking care to include all the structures except the peritoneum; then finishing the dressing with adhesive straps, a compress, and a wide bandage. The operation and dressing were performed in less than five minutes, and the patient placed in bed still under the influence of the chloroform. When she recovered

from its effects she expressed herself as feeling quite comfortable and grateful for her delivery from her intense suffering for so many hours.

We expected peritoneal inflammation to supervene, but in this we were happily disappointed. I visited her on the 29th, and found her quite comfortable; the pulse had gone down to eighty, and every symptom was favourable; the lochia was moderate in quantity; she had been nearly free from pain, and slept well during the night, though she had not taken any of the morphia and quina powders left for her in case irritation and debility should supervene.

March 30 and 31. Continues without an unfavourable symptom.

On the 3d of April she sat up three or four hours in bed. The wound had healed by the first intention.

On the 5th I took out the sutures but continued the adhesive straps, the compress and the bandage; she was then dressed and sitting up.

On the 8th the lochia ceased, and she went about her ordinary housework.

On the first of June she menstruated, and again on the first of July. Then she became pregnant, and on the first day of this April she gave birth to a healthy female child. I was in attendance, and found the "waters" had passed off two days before, but there had been no pain until within three hours of the time of my arrival. The os uteri was well dilated, and the head of the fœtus was entering the superior strait. Fearing that the former rupture might have impaired the integrity of the uterus, and that we might again have the accident repeated, I applied the forceps and assisted the expulsive efforts, so that in an hour and a quarter after entering her room, I had the satisfaction of finishing her delivery. She and her friends were very much relieved, for she had heard that it was the opinion of some medical men that she could not go through parturition safely after such an accident. There was nothing unusual attending gestation. She says this is her tenth pregnancy, and the easiest delivery she ever had; she generally had had difficult deliveries. Two of her children had been still-born in consequence of protracted and difficult labour.

Within the last fifteen years I have not hesitated to use the forceps at the proper time in preference to giving ergot. It is much more humane and altogether more safe. When the forceps are applied the danger of rupture of the uterus is passed, and by skilful traction and manipulation during each pain the suffering of the woman is very much lessened; but the effect of ergot in increasing the uterine contractions is sometimes too horrid to contemplate, and I shall never give it again for such a purpose. I have practised obstetrics in general practice more than a quarter of a century, and attended about 1500 cases of parturition, but never met with a case of rupture of the uterus before; and I think this accident would not have occurred in the present case in the hands of a scientific practitioner.

A very large proportion of the cases I find reported in the journals and works on midwifery have proved fatal. Very few who have reported cases have resorted to the abdominal section.

ART. XII.—*Case of United Twins.* By PHILIP HARVEY, M. D., of Burlington, Iowa. (With two wood-cuts.)

CASES of monstrosity possess a high degree of interest, both in a practical and speculative point of view. The one that I am about to relate is a case of twins, females, which were united by the parietes of the thoracic and abdominal cavities, from their necks to the common umbilicus.

I was sent for between eight and nine o'clock A. M., of Saturday the 14th inst., by the midwife in attendance, to see Mrs B., a German lady, residing near this city. She had then been in labour about nine hours, and the pains were vigorous and frequent. It was a primiparous case, the woman young and healthy, and rather under than over the middle size. On examination I found three legs protruding into the world nearly as far as the hips, and was informed they had been in that situation, with but little progress, for two or three hours. A careful scrutiny failed to detect the bond of union between the two children; indeed, from the rarity of such an occurrence it could hardly have been anticipated. Supposing them to be separate, I considered the proper plan of procedure would be to return one body as far as possible into the uterus, while the other was being brought down and extracted; but all efforts proved inadequate either to make the one advance, or the other recede. One funis could be felt, in which there was no pulsation, neither could any be perceived in the posterior tibial arteries; and the limbs being flaccid, and two of them somewhat livid, I had no doubt the children were both dead. I therefore deemed it justifiable and proper to divide one of the bodies above the ilia, in hopes that the pelvis of one being out of the way. I might be able to bring down the other and effect a separate delivery. To make this division I used the nail blade of a pocket knife, the cutting part being short and easily guarded by the finger from injuring the mother. This operation was attended with no difficulty. I was now able to make out that the two bodies were closely united face to face, so that above the umbilicus there appeared to be but one common trunk. The mass proving to be still immovable, I next attempted a division of the bond of union as high as could be reached; by this means the connection was so loosened that the prominence of one child could adapt themselves to depressions of the other, when, by the use of a good deal of tractile force, the thorax was brought into the inferior strait, the arms were then brought down and finally delivery was effected. These proceedings occupied about three hours, during which time the pains were strong and frequent; though I do not think they contributed much to the expulsion of the birth.

We sometimes meet with emergencies, in which it becomes necessary for art to take the case out of the hands of nature, in consequence of the entire

inadequacy of the latter; I viewed this as one of those emergencies. The labour was of ordinary duration for a first child, having lasted about twelve hours; and though the woman undoubtedly suffered much, her recovery was as rapid as could be expected under the most favourable circumstances.

Irregularities of conformation may be divided into deficiencies, redundancies, fissures, closures, and coalitions; the present instance belongs to the last of these divisions. In all respects, but the abnormity of structure, the children were finely developed and of the full ordinary size of twins; their weight being nearly eleven pounds. They were attached together from the neck to the umbilicus (see Fig. 1), not by a movable band, as in the Siamese twins, but by the ribs and clavicles of each child being continued to a common sternum on either side. In fact the two sets of ribs, sterna, clavicles, and soft parts were so arranged as to form one large thoracic cavity common to both; they were thus firmly and almost immovably united. There was but one funis; that contained four arteries and one vein; this was inserted into the lower and central part of the connection. The livers were united and contained two gall-bladders; the other abdominal viscera were distinct and regular. The double thorax contained two sets of lungs, smaller than usual, weighing only an ounce and a half; a large double thymus gland; but only one heart. This weighed about an ounce, was flattened and suspended diagonally across the centre of the thorax. The structure of this viscus was perhaps the most interesting feature of the case. Instead of being a combination of two hearts, as might have been expected, it was quite unique in its anatomy, the heart of a nondescript, and capable of subserving the purposes of uterine life only. It contained but one auricle, into which opened two systemic and two pulmonary veins. The auricle communicated by two auriculo-ventricular openings, each guarded by a pair of mitral valves, with a large muscular ventricle, from which issued two aortæ of ordinary size, with perfect semilunar valves. On each side of this large ventricle was a smaller one, communicating freely with the larger, and having no corresponding auricle. A small pulmonary

Fig. 1.

Fœtus.

artery, destitute of valves and not more than a tenth of the size of the aortæ, passed from each of the smaller ventricles. (See diagram, Fig. 2.)

Fig. 2.

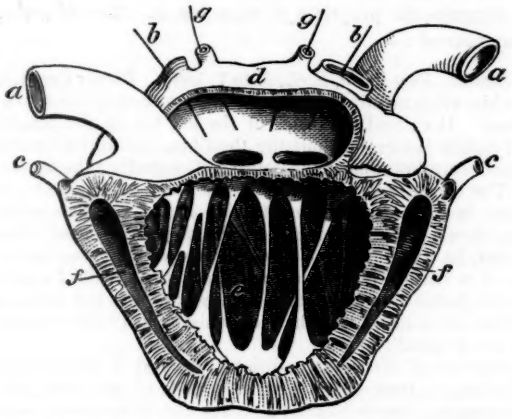


DIAGRAM OF THE HEART.—*a, a.* Aorta. *b, b.* Venæ cavæ. *c, c.* Pulmonary arteries. *d.* Auricle. *e.* Large ventricle. *f, f.* Small ventricles. *g.* Pulmonary veins.

The physiology of a heart of this kind would show the circulation to be permanently sub-reptilian in character. Those wonderful changes in the circulatory organs that take place after birth in ordinary cases, and compel the entire current of the blood there to flow on its twofold mission, through the pulmonary and systemic vessels, could not have occurred in this instance. Only a small proportion of the blood could have reached the lungs; much too small for the respiratory purposes of a high organization. Cold blooded life alone could be sustained with such a heart; hence these twins were non-viable.

It is to be regretted that popular and parental prejudices stood in the way of the preservation of this singular *lusus naturæ*.

BURLINGTON, IOWA, April 22, 1866.

ART. XIII.—*Arrest of Hemorrhage by Styptic and Compression, with a Case involving the Posterior Tibial Artery, incised transversely.* By J. W. SHERFY, M.D., Act. Passed Asst. Surg. U. S. N.

IN the number of this *Journal* for October, 1865, there was published an article on the "Arrest of Hemorrhage after Gunshot Wounds," &c., by Dr. James M. Holloway. The arguments in favour of styptics and com-

pression, illustrated by numerous cases, seemed conclusive as to the feasibility of these measures under certain circumstances, and induced me to make a trial of them in the following case, which appeared to demand something more decisive and speedy than a resort to ligation. The success of the application suggests the propriety of reporting it. The following are the notes in my journal:—

Naval Station, Bay Point, S. C., May 7, 1866. Plenty Grant, landsman, aged 27, while using an adze, received a severe wound by the tool's glancing from its aim. It entered the inside of the left leg at the junction of the lower and middle thirds, just missing the tibia, cutting backward, upward, and outward, severing almost the entire calf, including the *posterior tibial artery.* The wound was about four inches long, by one and a half deep. The patient is very muscular and full-blooded. The hemorrhage was of course very great. When brought to the dispensary, nearly five hundred yards distant, he was in a *fainting condition,* with *intense thirst.* By the assistance of a friend, the wound was held tightly while I applied tourniquets to the femoral and popliteal arteries, the first not seeming to effect much. Gave an ounce and a half of whiskey in twelve ounces of water, which he drank greedily.

In consequence of his weak condition, I deemed it hazarding too great a loss of blood to attempt ligating the cut ends of the artery, and thought at once of arresting hemorrhage by a styptic and compression, as set forth in an article in the *American Journal of the Medical Sciences,* Oct. 1865, page 340. Accordingly I saturated numerous pieces of patent lint, two inches square, with persulph. ferri solution, half strength, and forming a heavy pledget, forced it strongly into the wound, applying additional pieces upon and around it, and retaining these in place with a light bandage. I then bandaged closely from the toes upward, three inches above the incision, elevating the foot, and pouring on cold water freely. *The arrest was instantaneous.* Not half a drachm of blood escaped after the pledgets and first roller were applied. The tourniquet on the femoral was removed in four hours, having been gradually loosened, because painful. The accident happened at 12 o'clock, and he remained at the dispensary till 6 o'clock, when he was conveyed home, and a watch set over him for the night, with instructions how to proceed should hemorrhage begin, and to send for me immediately. ℞. Morph. gr. ½. Water applied every fifteen minutes or oftener; foot elevated.

The result of this treatment is awaited with considerable interest, especially by some half dozen medical officers who have heard of the case. I do not lack *confidence* in it, but my own interest is augmented by that of others. I repeat the reasons for its adoption: the great loss of blood the patient had already suffered, his feeble condition therefrom, and my unwillingness to lose *more* by the operation of ligating.

May 8. No indication of recurring hemorrhage. Had a comfortable night. Popliteal tourniquet painful; loosened it a little. Cold water freely, to relieve pain and swelling. Anodyne at night.

9*th.* Comfortable. Removed tourniquet. Water, *by irrigation,* copiously. Pain and swelling controlled by it. Anodyne at night. Pain in the calf of the leg above the wound. Complains some of bandages, but yielded to advice to endure them one night more.

10*th.* Removed nearly all the bandages, and loosened the remainder.

Continued water by irrigation plenteously. Does not suffer much. In good spirits; functions all normal. The water relieves pain readily. No sign of hemorrhage. The lint seems to be a solid *plug*, completely sealing the wound. Some of the external lint removed.

11*th*. Same general treatment. Removed outer and loose portions of lint. Wound seems completely stopped tight, as if the pledget would be covered in and become a part of that locality.

12*th*. Same as yesterday. Seems to be doing finely.

13*th*. Removed more of the loose portions of pledget, trimming them off with scissors. Is doing very well. Suffers very little. Water copiously. R. Sulph. magn. ℥ss.

14*th*. Removed lint, as yesterday. Changed bandage, limiting it to the immediate vicinity of the injury. Water, p. r. n., guided by swelling and pain.

15*th*. Pledget loose, and gently removed it entire, leaving the wound smooth (as if polished) and healthy, with a *hard plastic wall* around it, and now it *cannot* bleed. A mere trace of suppuration. Adhesive straps to approximate edges. Water, as before.

16*th*. Drew edges nearer with Husband's plaster. Simple dressings; water, p. r. n.

17*th to* 22*d*. Same as before.

24*th*. Goes easily on crutches.

The wound closed gradually, but, the muscles having been cut across their course, he regained strength in the injured limb very slowly. There is a depression in the line of incision. He has now, Aug. 25, been doing carpenter's duty nearly two months.

There are several considerations that urge the adoption of Dr. Holloway's suggestions, so clearly advanced. Whenever styptics and compression are applicable, they avoid—1. Additional loss of blood; a vital point, indeed, when a patient is nearly exhausted from a previous drain. 2. Enlarging, in some instances, the seat of injury, or the necessity of a new and separate incision; important items in some situations. 3. The administration of chloroform, with its attendant inconveniences and dangers, always to be borne in mind; or, at least, the use of ether, not always unattended with trouble. 4. The dread, to the patient, of the surgeon's knife; not an insignificant feature in some cases. 5. Complications and necessary assistance, so needful to some other methods of arrest, particularly the old, long-tried, and favourite method of ligation. The simplicity, convenience, and rapidity of styptics and compression, *when they are applicable*, are powerful arguments in their favour. And though we are compelled, in general, to forego the much-desired attainment of "primary union," and require a little more time for recovery, yet may we not gladly sacrifice these for the advantages above mentioned?

Hemorrhage from wounds is certainly divested of many of its former terrors. In this age the surgeon may well congratulate himself that the rapid and wonderful discoveries and improvements in his art have placed at his disposal such valuable means of combating an accident so common—always dangerous, always feared—and reduced it to comparative insignifi-

cance. Among these are the tourniquet, the ligature, acupressure, styptic and compression, digital pressure, refrigeration, and the ethereal tannic solution with the nebulizer. Here are means suitable to almost every case, and frequently there is a choice among several applicable to a particular case. Furthermore, it is reasonable to suppose that the advancement of our art may develop something else that will pass successfully the test of experience.

ART. XIV.—*Shoulder Presentation. Version in the Position on the Knees and Breast.* By JNO. G. BIGHAM, M. D., of Millersburg, Ohio.

ON the 12th of August, 1866, I was called by Mrs. F., æt. thirty-eight, in her sixth labour. Learned that the liquor amnii had been discharged two hours previously to my arrival; and found an arm in the vagina, together with a prolapsed and pulseless funis.

The pains were frequent and strong, and the shoulder was pressed firmly into the superior strait. Having no chloroform, and being four miles in the country, I determined to attempt version without the aid of an anæsthetic.

The patient was placed in the ordinary position for the operation for vesico-vaginal fistula (as suggested by Dr. Hildreth in *The American Journal of the Medical Sciences* for Jan. 1866). Found no difficulty in displacing the shoulder from its position sufficiently to introduce the hand. The force of the pains seemed materially diminished by the change of posture. After securing a foot I was surprised at the facility with which the version was accomplished.

Having twice previously been compelled to turn without the benefit of an anæsthetic, and giving due consideration to the degree of impaction of the presenting part, as well as to the size of the fœtus, &c. (this one weighing five and a half pounds), I have no hesitation in adding my mite of testimony in favour of the position named, when turning is required.

TRANSACTIONS OF SOCIETIES.

Art. XV.—*Summary of the Transactions of the College of Physicians of Philadelphia.*

1865. *Dec. 6. Case of Strangulated Hernia.*—Dr. John Ashhurst, Jr., read the following account of a case:—

William J. McCann, an Irishman, thirty-eight years of age, an operative in a cotton factory, was admitted to the Episcopal Hospital on the morning of Thursday, August 17, 1865, suffering from strangulated inguinal hernia of the right side. He stated that he had been ruptured six years previously by a strain caused by the stumbling of a horse which he was riding, and that his hernia had since come down at varying intervals, but had always hitherto been easily replaced. He had never worn a truss, and had sometimes been several months without any re-descent of his hernia. His right thigh was shortened and distorted, the result of disease of the bone in early life.

The hernia came down early on the morning of August 14th (Monday), and for the first time could not be replaced. He continued to work, however, during Monday and Tuesday, though suffering on the latter day from a great deal of pain and griping about the umbilicus. On Wednesday he sent for a physician, who made an unsuccessful attempt to reduce the hernia, and then left him, merely directing a purgative dose of magnesia. On Thursday he was brought to the hospital, where I found him at my morning visit of that day. At that time his skin was cold, his pulse feeble and rapid, his countenance shrunken, and his features pinched and anxious. He had been able to retain nothing in his stomach since Monday, rejecting absolutely everything by vomiting. He complained of intense and constant griping in the umbilical region, but was perfectly rational and anxious for operative relief.

Inspection of the groin showed a small tumour, red and excessively tender, immediately above Poupart's ligament on the right side, and which evidently contained a knuckle of intestine in a state of deep congestion if not positively inflamed.

The patient being thoroughly etherized, I resorted to the taxis for a few moments and with great gentleness, when, finding the hernia irreducible, I immediately proceeded with the operation as usually performed. Having divided all the tissues, except the hernial sac, I found that though the tumour could now easily be returned into the abdomen, the constricted bowel could not be emptied of its contents; in fact, that if the operation was terminated at this point the strangulation would continue, though the hernia were reduced. I, therefore, at once laid open the sac, and divided its contracted neck, when all evidences of constriction disappeared.

The bowel was darkly discoloured in one or two spots, but not to such an extent as to induce me to hesitate about returning it to the abdominal cavity. The lips of the wound were then accurately adjusted by means

of the interrupted suture of lead wire, and supported by a light compress and bandage. Half a grain of acetate of morphia was administered by hypodermic injection, and the patient thus kept quiet after the effects of the ether had passed off.

His diet was directed to be limited for a few days to a teacupful of milk every two hours. His bowels were opened by an enema the afternoon of the following day, and his urine drawn off by a catheter at stated intervals as long as it was necessary.

This man recovered rapidly and without a single unfavourable symptom, the incision being entirely healed on September 11th, and the patient leaving the house a week later quite well.

With regard to the question of opening the sac in the operation for strangulated hernia, I should, of course, prefer to avoid this additional risk if it could be done with safety. And hence in a case where strangulation had existed but a short time, if I found on reaching the sac that the bowel could be emptied of its contents and rendered perfectly flaccid by slight pressure, I should consider it proper to return the sac unopened, believing that the prospects of recovery would be thus improved; but in the opposite contingency, and generally in any case of doubt, I should think it much safer to lay open the sac, knowing that after all, death following this operation is very seldom due to the operation itself, but rather to the condition of things preceding.

I have added a table giving a record of all the cases of strangulated hernia treated in the hospital from its opening to the present time, for which I am indebted to Dr. Bodine the present senior resident surgeon.

An analysis of the following table shows that of twelve cases three were under forty years of age, five between forty and fifty, and four over sixty; nine were males, and three females; six were natives of this country, and six foreigners; three were single, five married, and four widowed; four recovered, and eight died, one of the latter being in such a condition when admitted as not to permit any operation.

The average residence in hospital of those who recovered was $53\frac{1}{4}$ days; of those who died $5\frac{3}{8}$ days; of those who died after operation $5\frac{2}{7}$ days.

The occupations of these patients were so various as not to justify any inference as to the effect the nature of a person's employment might exercise as a predisposing or exciting cause of the disease.

No doubt many if not most of the fatal cases in the above table would have recovered had the operation been resorted to at an earlier period; and it is a matter of regret that every physician should not feel himself competent to operate in any case the moment strangulation occurs, instead of temporizing, as is too often done, until the disease has so far advanced as to render the most skilful operation of no avail.

A tabular view of twelve cases of strangulated hernia treated at the Episcopal Hospital.

No.	Name.	Age.	Sex.	Nativity.	Conjugal state.	Occupation.	Date of Entrance.	Result.	Date of discharge.	Days in Hospital.	Remarks.
1	William Scholscher	50	M.	Germany	Widower	Labourer	July 8, 1854	Recov'd	Sept. 9, 1854	54	
2	Frances Johnson	76	F.	Ireland	Widow	Teacher	Sept. 9, 1856	Died	Sept. 16, 1856	7	
3	Robert Trotten	70	M.	Ireland	Married	Weaver	Oct. 3, 1856	Died	Oct. 9, 1856	6	Artificial anus had formed before admission, therefore no operation.
4	James Flood	32	M.	Ireland	Married	Dyer	April 14, 1857	Died	April 25, 1857	11	
5	Elisha Cunningham	45	M.	U. S.	Married	Machinist	Dec. 29, 1858	Died	Jan. 3, 1859	5	Died from peritonitis.
6	Elizabeth Hammel	44	F.	U. S.	Widow	Nurse	Dec. 13, 1859	Died	Dec. 19, 1859	6	Strangulation had lasted five days; bowel gave way four days after operation, and feces passed by wound.
7	Thomas Dunlap	40	M.	Ireland	Married	Weaver	April 19, 1860	Died	April 21, 1860	2	
8	Josiah Weeks	43	M.	U. S.	Single	Shoemaker	July 20, 1860	Died	July 21, 1860	1	
9	William Patterson	25	M.	U. S.	Single	Waterman	Jan. 4, 1862	Recov'd	Feb. 2, 1862	29	
10	Peter Appleton	68	M.	U. S.	Married	Wheelwright	Jan. 9, 1862	Died	Jan. 14, 1862	5	
11	Mary Ann Burch	62	F.	U. S.	Single	Nurse	Sept. 26, 1863	Recov'd	Jan. 2, 1864	98	Hernial sac not opened.
12	William J. McCann	38	M.	Ireland	Widower	Operative	Aug. 17, 1865	Recov'd	Sept. 18, 1865	32	

1866. *Jan.* 3. *Strangulated Hernia.*—Dr. PACKARD related two cases of strangulated femoral hernia, illustrating the importance of an operation being performed sufficiently early.

CASE I. Nancy Stoddard, æt. 49, was admitted into the Episcopal Hospital December 20, 1865. She was in good general condition, but had a tumour in the left groin, tender but not painful. This tumour had first appeared after she had made a violent effort one week before, since which time her bowels had not been moved. She was said to have had stercoraceous vomiting, but this was not certainly known. She was herself of rather feeble intellect, and the history given of her by her friends was somewhat vague. Two physicians had seen her, and made attempts at taxis, but had only succeeded in bruising the skin, which was discoloured, and, as before stated, tender.

On the evening of her admission she had some vomiting, thought by the nurse to be stercoraceous, but not decidedly so. Two injections were given her; the first brought away some scybalous masses, the other came away unchanged.

On the 21st I examined the case with my colleague, Dr. S. Ashhurst. We had just decided to wait for twenty-four hours before interfering, in view of the patient's general good condition and the doubtfulness of the history and local signs, when decidedly stercoraceous vomiting occurred, and I at once proceeded to operate.

An incision was made along the most projecting part of the swelling, and the layers successively divided until we reached the sac, which was greatly distended, and closely resembled bowel. Dividing this very carefully by successive cuts on a director, we were at length met by a gush of dark reddish grumous liquid with a slightly fecal odor.

Laying the sac open freely, I found a loop of intestine, very much congested, constricted at the femoral ring. On dividing Gimbernat's ligament inwards, with a Cooper's knife, to the extent of about one-quarter of an inch, I returned the bowel without difficulty. The wound was sponged out and closed with five wire sutures.

The patient was at once placed under the use of opium freely, both by mouth and by suppository. The dressings were soon soaked with a thin yellow stercoraceous liquid like that vomited previously, and this continued to flow until shortly before death, which took place in about ten hours. Air also passed occasionally through the wound. From the time of the operation, which was done with the aid of ether, nothing was retained by the stomach.

On opening the abdomen, the strangulated knuckle of intestine, a portion of the ileum, about three feet above the caput coli, was at once seen. The pelvis was full of thin fecal matter, which had escaped from the bowel by an opening a few lines above the point of constriction. Signs of commencing peritonitis were everywhere visible.

My own idea is that the long continued strangulation had so weakened the tissues that they gave way as soon as peristaltic motion was renewed, and that an operation six or seven days sooner would have saved the patient's life.

CASE II. The other case alluded to was that of Mrs. Duffy, æt. 60, who came under my care in the absence of Dr. Norris, November 12, 1862. She had been attacked three days before with symptoms of strangulation in a hernia which she had had for fifteen years. Her bowels became at once obstinately costive; she had some pain in the upper part of the

stomach, and nausea and vomiting ensued. Some of the matters ejected were stercoraceous. Attempts at taxis were made without success.

When I saw her the tumour was about as large as a hen's egg, firm, but slightly movable, and painful only when pressed upon. Her pulse was quick and not very strong, her nausea constant; the tongue was covered with a dirty fur.

With the assistance of Drs. Boker and Wurts, she was thoroughly etherized by Simpson's method, and the taxis was again attempted, but in vain. I therefore proceeded to operate by cutting down obliquely over the most prominent part of the tumour. A small artery, probably the superficial epigastric, required ligation. Several successive layers of tissue were next divided, the hernial protrusion was reached and found to be femoral. The constriction was quite firm and seated just at the ring. Gimbernat's ligament was nicked in two places, a few adhesions broken up with the finger-nail, and the protrusion returned. It consisted simply of a knuckle of intestine. The wound was immediately closed with sutures and cold water dressings applied. She was ordered gr. ij of opium every six hours.

Nov. 13. Pulse 80; skin good. No vomiting or pain since the operation.

A day or two after there was a slight erythematous blush about the wound, which soon disappeared under the use of an ointment of oxide of zinc.

15*th*. She had a free alvine evacuation without pain.

18*th*. The sutures were removed, the wound having closed except at the point where the ligature was attached.

The ligature came away a day or two later, and the case presented no further symptoms worthy of record. I believe that the result would have been far otherwise had the operation been put off until the local symptoms became more urgent, and that the rule in all cases should be to interfere with the knife at once when strangulation exists and the taxis cannot be successfully employed. Nor should attempts at the taxis be carried on too long, for the bruising of the parts may be such as to influence very unfavourably the ultimate issue of the case. In the instance first mentioned it may be fairly supposed that an earlier operation would have saved the patient's life.

March 7. *Abscess of Brain.*—Dr. LEVICK made the following remarks:—

On Friday, Feb. 9, 1866, Mr. W. (æt. 40) called at my office and left word for me to visit him during the day. I found him, a few hours later, in his chamber, complaining of pain in his head, and of what he termed "biliousness." He subsequently told me that he could see but one-half of my face, and on holding up my hand, that only one-half of it could be seen by him, the other half being replaced by a dark line. This occurred equally when one eye was closed or when both were open. The pupils responded naturally to light, and the pulse was 70. He had attended to his usual business, that of a musician by night and a shopkeeper by day, until the morning of my visit. On the preceding night he had played with the band until 2 o'clock A. M.

A careful investigation disclosed the following facts: On the 9th of May, 1865, he hurt his head by the falling of a bed-canopy; this did not amount to much. On the 29th of June a window-cornice fell and stunned

him. In July and August he occasionally had headache and unusual drowsiness, so much so that while performing at the park he would often fall asleep as soon as he had finished his part, between the pieces of music. Six weeks before calling on me he at times felt giddy, so much so that in one instance, while walking the street, he had to hold on to the lamp-post to keep from falling. On several occasions, when arranging goods on the shelves in his shop, he would brush his hands over his forehead and say he was giddy, or, to use his own words, was "drunk without having drunk anything." Yet these symptoms were so slight as to have excited no uneasiness, and had left so little impression that they were only elicited by a rigid examination. During the entire winter he had been engaged with his band three nights of each week, and had played at all or nearly all the various balls given at the Academy of Music. It may be further stated that he was a man of very temperate habits, and that nearly all of his family had died of consumption.

Pain in the head and imperfect vision, with some slight gastric derangement, were the troubles complained of at my first visit. These symptoms continued, the pain in the head at times intense, at others almost entirely absent. A heavily-coated tongue, and a taste as if turpentine were in the mouth, were next noted. The patient walked about his room until the morning of the 19th, though complaining of intense pain in the head, and said his head felt as if it were as large as a bushel. There was no undue muscular rigidity, no paralysis, no convulsion, no aphasia, and the mind was perfectly clear until a few hours before death, so much so that on the morning of the 19th, one day before he died, he recollected that the policy of insurance on his house had that day expired, and gave directions for its renewal. During the latter part of this day there was some mental obscurity, with lucid intervals. Late in the evening he called his wife to him, kissed her affectionately, and gave directions about his child. A few hours later he became comatose, and died at 6 A.M. of the 20th ult.

The *post-mortem* examination was made fifty-six hours after death. The brain only was examined, and is now presented to the College. The subsequent notes are those of Dr. William Pepper, Jr., by whom the examination was carefully conducted.

Post-mortem appearances, Feb. 22, 1866, *fifty-six hours after death. Brain only examined.* By Dr. WILLIAM PEPPER, Jr.—The vessels of the dura mater and arachnoid much gorged with blood; membranes on the convexity of the brain smooth, though in some places opaque and thickened; no effusion at the base. On removing the brain, the various structures at the base of the brain were all much softened and discoloured. On making incisions into the brain, an abscess was found in the anterior lobe of the left hemisphere, and a second one in the posterior lobe of the right. The one in the left hemisphere was small (about the size of a hickory-nut), the tissue around it much softened, and the abscess not surrounded by any well-marked wall. The contents, microscopically examined, were imperfect pus-cells, granule-cells, and granular matter. The abscess in the right hemisphere bulged the arachnoid out, it was so superficial, and was of much larger size than the other, measuring an inch and a half in diameter. It was inclosed by quite a firm wall consisting of condensed connective tissue, the spindle-shaped cells very large, and was lined by a layer of tenacious lymph. Its contents were purulent, identical with those before mentioned. The ventricles did not contain

much fluid, but each was lined by a layer of consistent, whitish-yellow inflammatory lymph. The nerve structure, in all parts excepting the more central portions, was in a state of white softening. No tubercle-corpuscles were seen.

Etherization.—Dr. PACKARD called attention to the subject of anæsthesia by sulphuric ether in the following remarks:—

In May, 1865, I brought before the College[1] some statements of Dr. Lente, of Cold Spring, N. Y., as to the small quantity of ether required to produce anæsthesia, if given in a certain way. I have since had numerous opportunities of testing the accuracy of Dr. Lente's views, and although I have not succeeded in obtaining as complete insensibility as he has in so short a time or with so small an expenditure of ether, I believe his idea is very valuable in the saving of that expensive article. The great point is to have in the inhaler as little substance to absorb the ether, compared with the surface of evaporation, as possible. Hence a thick sponge is very wasteful of ether. A very thin towel or handkerchief, fitted inside of a cone of newspaper or pasteboard, answers extremely well. A small quantity only of ether should be put in at a time, and this should be *dashed* in, so as to spread out and evaporate readily. No fear whatever need be entertained of bad consequences from the inhalation of pure ether vapor (as nearly as we can give it), unless the patient is the subject of serious thoracic disease, or is very old and feeble. In this latter case, I believe I have seen pulmonary apoplexy brought on by the prolonged administration of ether.

May 2. *Fatal Peritonitis from Perforation of the Appendix Vermiformis.*—Dr. A. D. HALL exhibited to the College a specimen, with history, obtained from a patient of Dr. Corse, of this city, at whose request the examination was made.

Mrs. S., aged 25 years, of slender frame and rather delicate health, the mother of two children, the youngest four months old, both of whom she had been obliged to wean soon after birth, from want of nourishment, had complained for one or two weeks chiefly of languor and debility, when she was attacked, on the 10th of March, with severe pain in the lower part of the abdomen, followed by nausea and vomiting. The pain continued during the two following days, but had somewhat abated on Tuesday, the 13th, when she ate a piece of chicken, after which it became greatly aggravated and the vomiting still more incessant. On Wednesday, the case having assumed a more serious aspect, her husband, himself a physician, sought other counsel. At this time her pulse was 140, abdomen extremely tender on pressure, bowels obstinately constipated and somewhat tympanitic, and the stomach extremely irritable. She lay upon her side, with her legs drawn up, and had an anxious, distressed countenance. There was no tumour or other indication of hernia to account for the symptoms, and the disease was at once recognized as peritonitis of the most general and dangerous type. The usual remedies for peritonitis were employed without effect, and the patient died on the 15th of March.

Inspection, fifteen hours after death.—The body preserved in ice; rather a small, spare figure, face thin, surface of abdomen marked with leech-bites and the effects of a blister. Small amount of fat in the abdominal

[1] See Transactions of the College, in the Amer. Journal for Jan. 1866, p. 154.

parietes. Half an ounce of fluid pus was found in the interspace between the stomach and liver. The folds of the mesentery and the convolutions of the intestines were glued together by easily separated lymph. About six ounces of brownish turbid serum were found in the pelvic cavity. The results of inflammation appeared, however, most marked in the right iliac region, and hence arose a suspicion of perforation of the intestine in that neighbourhood. On a careful examination, a perforating ulcer of the appendix was found, through which a grooved director could be passed, communicating freely with the peritoneal cavity. The perforations were two in number. The first was one inch from the caput coli; the muscular coat of the bowel appeared to have been destroyed by ulceration, and then the peritoneal coat had given way in three small openings one-sixteenth of an inch in diameter; these were arranged in a triangular manner. The second was a solitary perforation an inch and a half from the end of the appendicula. The mucous membrane of the process appeared to be extensively ulcerated, and in places presented the cribriform appearance not unfrequently found in the intestinal tract of patients dying of Bright's disease. Although thick patches of lymph had been thrown out in separate deposits, still no attempt by nature to limit the effusion of foreign material by lymph barriers was discoverable. There was nothing to show that any foreign body nor that any impaction of feces had been the origin of the lesion, although the material, if such had been the origin of the mischief, might readily enough have escaped into the cavity of the abdomen.

Perforation of the appendix is not at all a rare occurrence. Numerous cases of it may be found in the *Transactions of the Pathological Society of London*, and in the various journals, domestic and foreign. The presence of foreign bodies as a cause of ulceration and perforation was probably the most generally received opinion; but in thirteen cases under Prof. Leudet's[1] observation, six were consecutive upon phthisis pulmonalis, and in no case under that author's notice was the perforation the result of typhoid fever. In the case laid before the College there was no suspicion of either typhoid or tubercular disease.

[1] Pathological and Clinical Researches regarding Ulceration and Perforation of the Appendix Vermiformis, Archives Générales, Août, Septembre, 1859.

ART. XVI.—*Summary of the Proceedings of the Pathological Society of Philadelphia.*

1866. *March* 14. *Cancer of the Liver.*—Dr. H. WILLIAMS presented the specimen and read the history of the case from which it was derived.

John McGlincy, æt. 45; Ireland; a labourer in a rolling-mill; healthy parentage; always enjoyed good health until early in July, 1865; had been a moderate drinker. He first noticed, from no explainable cause, a catching pain about the left lower ribs, shooting over to right side, which was subject to irregular remissions.

December 11. His liver was markedly enlarged, especially the left lobe, but there was no jaundice. His urine was normal in every respect. He still complained much of the pain mentioned above.

Jan. 8. A slight icterode tinge of the conjunctiva was noticed, which deepened in a few days into universal jaundice; increased debility, with progressive emaciation, and great tenderness over the region of the liver. It was apparent to the hand that bossellations existed over the surfaces of the enlarged hepatic lobes that were exposed to palpation. His appetite now was very poor, food giving him much distress. His stools were of a light clay colour, natural consistence; though at times constipation existed. Tongue throughout maintained thick coat of yellowish-white fur.

Feb. 2. The enlargement at the upper part of the abdomen had become very marked, and there was slight bulging of the lower ribs of the right side. There was tenderness over the point of swelling as well as the whole hepatic region proper, but in the part of the liver exposed to palpation it was noted that it existed more markedly in several localized spots. Nausea was a frequent symptom at this time, but rarely or never was there vomiting; pain, irrespective of pressure, almost constantly existed. The urine was at this time 1012; slightly acid, deep biliary brown colour; no albumen; chlorides fair; it gave a greenish-purple play of colour with nitric acid. Venous circulation of the skin of the abdomen was marked more especially on the right side. The thoracic viscera proper seemed to be in a normal condition, though a trifle less resonant percussion than existed in the left was noted anteriorly at the upper part of the right lung. (The heart sounds were normal.) There was some dulness with feeble respiration at the base of the right lung, probably from upward pressure of the enlarged liver.

28*th.* The abdominal tumour had become more marked, as also the bossellated feel of its surface. Emaciation was very great, with corresponding debility. He continued to fail in strength and flesh, but with no new symptoms. The mind remained clear. He died March 7th, from exhaustion.

Post-mortem twelve hours after death.—Body and all the tissues jaundiced; lungs healthy, save a few calcareous concretions at both apices, and ossification of many of the bronchi; heart smaller than natural; clot in right ventricle; spleen normal, as were the kidneys. From the upper end of the jejunum through the transverse colon, the mucous membrane covered

with grumous blood, mixed with slime and mucus. The liver was much enlarged, especially its left lobe, which extended across to left side. Its surface was bossellated, and interior studded with yellow masses from size of millet-seed to that of a walnut; of a semi-caseous consistence. The microscope showed in these, liver cells crowded with granular fat, and in some instances oil drops; free nuclei with sometimes one and two nucleoli; cells of irregular form, containing one to three nuclei—granular matter; the whole involved more or less in a non-fibrillated stroma, which would be granular in one field, in another more uniform. Between these cancerous nodules the liver cells were stained of yellow hue, especially the fat granules contained in them.

Phthisis Pulmonalis. Death from Tubercular Meningitis in an Adult.—Dr. GEORGE PEPPER read the following case of this:—

Rudolph Baensch, a native of Breslau, æt. 36, married, descended from healthy parents, has lost five children; the last and sole surviving one died two months ago from some acute affection with marked head symptoms. He is stated to have been healthy until the commencement of his present illness. His occupation is that of a seaman, but he has not followed his calling for the last six months, having resided at 501 Prune Street, where he has been engaged in bottling beer in a damp, dark cellar.

About three months ago he first contracted a cough, accompanied by a frothy white expectoration, and an occasional sharp stitch in the left side. This has never left him, but has not been sufficiently severe to prevent him from attending to his work; he has lost a considerable amount of flesh, but until very recently his appetite and spirits have been good; for the last two weeks, however, he has been peevish and irritable, though perfectly rational; he has occasionally suffered from headache, which has been more frequent and severe of late; his bowels have been confined. On the 26th of February, 1866, his cough became more violent, frequently eliciting from him cries of pain; the expectoration also became yellowish, and more copious, but at no time was it tinged with blood. He has never during his illness suffered from vomiting. On the 1st of March he took some purgative medicine, which produced two copious healthy evacuations on the following day. On the 3d, feeling much more sick, he retired to bed at about 5 P. M., and soon after became delirious, the delirium being of the mild, wandering type; his appetite, which lately had been capricious, now became voracious; the bowels still constipated, the urine passed freely, and of a deep red colour.

March 5, 1866, 5 P. M. First visit: wandering delirium; attention can be only partially aroused, but no answers could be elicited from him. Heat of surface normal; pulse 90, weak and gaseous; heart sounds clear and sharp; respirations noiseless, feeble but not hurried; no play of alæ nasi. On the right side the percussion note of good resonance; the respiratory murmur loud and puerile. On left side, from the third interspace to the base of the lung, the percussion perfectly flat, but in the infra-clavicular space the note was of high pitched tympany, with a well-marked "bruit de pot félé." The respiration over the space marked as flat on percussion, was bronchial in character. Under the clavicle large gurgling and bubbling râles were heard, having a metallic resonance. Pectoriloquy also was well marked at this point. Vocal fremitus markedly increased over the whole lower part of the lung.

Tongue coated with a yellowish creamy fur; bowels confined; urine

passed involuntarily; no eruption; the pupils of natural size; eyes not injected; has not complained of headache in any marked degree immediately before the delirium set in; the limbs responded to stimuli perfectly. R.—Whiskey fʒss every three hours; blister to nucha; cold to head; morphia and camphor.

6th, 10 A. M. Collapsed; profound coma; tendency to slip down in bed; urine passed involuntarily; extremities cold; capillary circulation very sluggish; breathing stertorous and interrupted; intervals of many seconds elapsing between some of the respirations; pupils rather small; pulse very feeble, slow, about 90. Increase whiskey to fʒj every two hours, alternating with beef essence; turpentine enema; stimulating frictions to extremities. 5 P. M. Heat of surface good; head rather warm; cheeks flushed; pulse 95, feeble; respirations stertorous, 48 per minute, and intermittent; no cough or expectoration; urine still passed involuntarily; bowels confined; power of deglutition much impaired. The left side of the body appeared paralyzed, the hand and arm being rigid and contracted, the leg extended but motionless. The right arm was either moved violently up and down, or else contracted; the right leg was in an almost constant state of motion; the limbs responded but very slowly to stimuli (if at all). The eyes were rolled strongly up and to the right; not glazed; the pupils rather contracted; the eyes appeared insensible to irritation.

The sensibility of the whole body very much impaired; the "tache meningitique" follows but slowly the removal of the finger.

Physical signs remain much the same; large bubbling rales are heard through the right thorax apparently from retained secretions.

Reapplied blister; cold to head; turpentine enema; whiskey fʒss every two hours; beef essence; potas. iodid. gr. x every three hours.

11 A. M. Until twelve last night the movements of the right side of the body continued almost constantly, but after that time he became perfectly quiet, swallowing the stimuli, &c., without much apparent difficulty; the surface was drenched with a warm sweat, the face being much flushed through the night; breathing less stertorous. At 10 A. M., he had a decided convulsion accompanied with opisthotonos. Pulse 138, very weak and compressible; respirations 36, not so irregular as before; although there are occasional intermissions of several seconds, the stertor still exists. The contraction of the left arm has disappeared, but motion seems very imperfect; sensibility and reflex action are abolished. The skin warm and moist; face pale, and covered with drops of sweat; eyes not injected, pupils rather contracted, not responding. Tongue dry and brown; bowels confined; urine retained, about Oiss drawn off of clear deep reddish-yellow colour, sp. gr. 1026, acid, considerable amount of albumen; chlorides deficient; no deposit. Respiratory sounds the same. Heart sounds very feeble. Increase stimuli, &c. Died at 2 P. M.

His wife states that immediately before death he gulped up at least Oj of a thick yellowish matter.

Post-mortem examination twenty-two hours after death.—Body muscular and in good condition. Cadaveric rigidity well marked. The abdominal viscera appeared perfectly healthy, but were most intensely congested.

The heart healthy, no clots; the right lung contained disseminated miliary tubercle, but was crepitant throughout, and bound down by strong old pleuritic adhesions. The left lung also bound down by very firm adhesions; the apex contained a large anfractuous cavity, and a few smaller non-communicating cavities. The lower two-thirds of the lung was per-

fectly packed with yellow tubercle, non-crepitant and dense. The cavities in the apex appeared of old formation; they were lined with a distinct membranous wall and surrounded by condensed lung structure. It seemed probable that the patient had suffered from chronic phthisis for some time, and that the cause of death was a fresh deposition of tubercle throughout both lungs, and upon the brain. No history favouring this view, however, could be obtained.

Brain.—The membranes deeply congested; over the convexity of the cerebrum they were opaque and thickened, while over the cerebellum they appeared to be merely thickened, but perfectly smooth. On *Right Hemisphere* a few granules of large size were found in the fissure of Sylvius, while over the convexity flat yellowish granules were seen through the thickened and opaque membranes. *Left Hemisphere.*—The middle cerebral lobe was much softened, and over the convexity of the cerebrum the membranes were infiltrated, thickened, and studded with minute grayish granules. On drawing the membranes off from the cerebral substance, the veins of the pia mater appeared distended and tortuous; the under surface of the membranes was thickly studded with minute grayish granules. The ventricles contained a very small amount of sanguinolent serum, but their lining membrane appeared perfectly clear and smooth.

Under the microscope the granules from the various parts mentioned presented the characteristic appearance of tubercle.

March 2. *Embolism of Renal, Splenic, and Cerebral Arteries.*—Dr. HUTCHINSON exhibited the specimens and read the following history of the case from which they were derived; for notes of this case he was indebted to the resident physician at the Episcopal Hospital.

Joseph Hall, aged 30 years, born in England, and formerly a soldier in the British army, was admitted into the medical wards of the hospital, March 2, 1866. Symptoms were not marked at that time: there were slight hebetude of mind, a coated but moist tongue, pale face, slight headache, one or two spots resembling slightly the rose-coloured *taches*, and disappearing under pressure, but no tympanites, abdominal tenderness, gurgling, diarrhœa, nor rales in the chest—the patient had, however, been subject to epistaxis. The history of the case, as obtained from himself, was not satisfactory. His sickness had lasted four weeks, coming on suddenly with vomiting and intense pain in the small of the back, which had been followed by painful cramps in the leg and some difficulty in passing his water. Pressure over the kidneys caused pain, especially on the right side.

His urine was submitted to a chemical and microscopical examination, and found to contain a small quantity of albumen, epithelia from the bladder and pelvis of the kidney, and some crystals of the triple phosphate. There was no dropsy. No change occurred in patient's condition until March 8, and he was up to that time treated as a mild case of typhoid fever.

On the afternoon of that day he was taken with nausea and vomiting, and the cramps in his leg occurred for the first time since his admission. In the evening his symptoms were entirely relieved by the treatment employed.

March 9. Dr. Watson found the patient, at his morning visit, comatose, and was told that he had been so for five hours. The pupils were widely dilated and insensible to light; the respiration was stertorous; pulse 100; in addition to this there was entire paralysis of right side, which was also

subject to clonic spasms, and to the hand appeared very much less warm than the other side, although this was not confirmed by the thermometer.

Dr. Watson, who believed the case to be one of uræmic poisoning, applied cups to the loins, and administered an injection containing Epsom salts and assafœtida.

At 10 A. M. I saw the patient, and then for the first time heard a rough, rasping murmur at the apex of the heart, synchronous with the systole, and communicating a sensible fremitus to the præcordial region. I directed a blister to be applied to the back of the neck, and a free evacuation to be procured from the bowels.

My own diagnosis of the case was embolismus of one of the cerebral arteries, and I was led to form that opinion by the grave cerebral symptoms present—the comatose condition, hemiplegia, and stertorous respiration; the age and appearance of the patient almost excluding the idea of apoplexy. I thought there was no sufficient reason to entertain the view of uræmia—there had been no suppression of urine, and the quantity of albumen had always been small.

March 10. The remedies employed having failed to produce a motion, recourse was had to croton oil, which brought away a large quantity of feces. The pulse being full and tense, the patient was bled from the temporal artery to the extent of fl. oz. v.

Patient died at 6 P. M.

The *autopsy* was made eighteen hours after death.

In removing the brain the arteries at the base were torn, and no embolus could be found. The membranes were slightly congested; the ventricles contained a slight amount of serum; the brain substance was carefully examined, but nothing abnormal was discovered.

The lungs were healthy, with the exception that in the right lung were found distinctly circumscribed congested points at the apex and back of upper lobe. The mitral valve of the heart was insufficient, and covered with vegetations about which the fibrin of the blood had coagulated; the other valves were healthy. The liver was healthy. The kidneys were normal in size, but their section exhibited pyramidal spaces where the colour of the kidney had changed to a brownish-yellow; these were found in by far the greater number in the right kidney. The same condition was found to exist in the spleen. Some of the spots were evidently of more recent origin than others.

A careful dissection revealed a clot in the branch of the renal artery supplying the largest of these spaces in one of the kidneys.

The urine found in the bladder was examined, but, although it was found to contain albumen in somewhat greater quantity than before, and abundance of epithelial cells, no distinctly-marked tube-casts were found.

A microscopic examination of the kidneys and spleen showed the tissue to be in a condition of retrograde metamorphosis—the cells of the kidneys being very granular and containing some oil; besides which there was found a large quantity of free oil and granules in the field of the microscope.

Although no clot could be found in the arteries, I feel convinced that a more careful examination, either of the arteries at the base, or of the internal carotids or vertebræ, would have revealed the presence of an embolus. The condition of the spleen and kidneys was unmistakably due to occlusion of some of the smaller arteries, and there is no other view which will

satisfactorily explain the coma and paralysis, as the amount of congestion and effusion was not sufficient to have caused them.

It is somewhat singular that the majority, if not all, of the reported cases of embolismus of the arteries of the brain have occurred on the left side, giving rise to paralysis of the right side—a condition which was present in our case.

The intense pain in the loins, of which patient complained, occurred probably at the time of the plugging of the branches of the renal arteries.

In the case which was reported to the Society by myself, April 23, 1862, and published in the *Amer. Jour. Med. Sciences*, October, 1863, in which embolismus of the iliac artery had occurred, the excruciating pain to which it gave rise was one of the earliest and most diagnostic symptoms.

April 11th. Hemorrhagic Erosion of Gastric Mucous Membrane.—Dr. WM. PEPPER presented the specimens with the following history:—

Esau Clownley, aged 53 years, admitted to Pennsylvania Hospital, March 29, 1866, with sloughing of the skin and cellular tissues on the inside and outside of right knee-joint—resulting from a contusion received two weeks previously, but which he had not allowed to prevent him from continuing work. He was placed upon stimulus, nourishing diet, iron and quinia, and the wound dressed with creasote. Extensive burrowing, however, ensued; the tissues of the thigh being undermined and sloughing. The discharge was profuse, and his strength rapidly gave way, his pulse becoming feeble and frequent.

April 7th. At 10 A. M. he had a severe chill followed by profuse sweating, and on the following day a slight chill, followed by moderate sweating. After this he had no distinct chill, but sweated profusely toward night; the discharge remained very free, but became horribly fetid and grumous; rapid emaciation ensued, with hebetude, colliquative sweats, and hiccough, and he died about noon of April 11th, about four weeks after reception of the injury.

At the *post-mortem*, two and a half hours after death, no metastatic abscesses were found. The blood, however, was much disintegrated, bistre-coloured, with excess of white corpuscles and crenation, and pallor of the red globules.

The mucous membrane of the stomach was thin, with small patches of hemorrhagic erosion, forming superficial ulcers with dark reddish-black bases. These ulcers varied from the size of a split pea to half an inch in diameter. The dark matter forming their base contained hematin in abundance, both as crystals and granules, a few altered blood-corpuscles, cells deeply stained, fragments of glands also stained with hematin, granular matter, and some free oil. The other organs presented nothing abnormal.

April 25th. Fracture of Ribs, Arm, Leg, and Pelvis from a Fall.—Dr. WM. PEPPER presented the specimens, and read their history as follows:—

Abby Brown, aged 65, widow, was admitted to Pennsylvania Hospital (woman's surgical ward) at 8.45 P. M., April 19, 1866. She has been childish for several years, and has been in the habit of drinking, though not to any great excess, for about the same period. To-day she had drunk several times, so that her daughter noticed some change in her manner—but it could not be said that she was intoxicated. The daughter, who habitually nursed her, left her about twenty minutes before she was found on the pave-

ment below, so that it is not known whether she fell from the window or intentionally jumped out. She was found curled up in a heap, lying on the right side, within a few inches of the curb-stone. The window from which she fell was about twelve or fifteen feet from the ground.

On admission she was completely unconscious. There was some blood upon head, and a soft fluctuating tumour over left eyebrow, with lacerated wound of scalp, evidently from effusion of blood beneath the scalp. There was no other evidence of injury to skull, neither was there any discharge from either ear, epistaxis, or hemorrhage into the fauces. The left pupil was dilated, slightly irregular in form, and wholly insensible; the right pupil, also insensible, was much contracted. There was no orbital ecchymosis. The face was much drawn to the right, and in respiration the left cheek alone flapped very markedly, indicating complete paralysis of the buccinator of that side. The position of the tongue seemed to be in the mesial line, but fallen forward between the teeth.

She made no movement of head or any other part of body. And it was impossible by any ordinary stimulus to arouse reflex action of any muscle. Electro-muscular sensibility was entirely gone, but electro-muscular contractibility was not entirely absent. There was, however, this peculiarity about it, that upon the right side of the body, from the head down, the muscles responded quite forcibly to the galvanic stimulus, although in a less degree than in health. On the left side, the muscles of the face responded fairly, although much less strongly than those of right side. The muscles of left arm gave a comparatively much more feeble response: and it was with great difficulty, and only by using most powerful currents, that the least contraction of any muscle of the left lower extremity could be produced. The only muscle in fact which responded at all was the external hamstring muscle. The temperature of the extremities was reduced. No involuntary discharges had taken place. The pulse was regular, though somewhat large and feeble, and 90 in minute. Respiration 18 in minute, to a great degree diaphragmatic. Abdomen moderately distended.

In addition to the injury of the skull, above mentioned, she had also sustained a fracture of several of the upper ribs of left side, which seemed complicated with a slight wound of lung, as there was some emphysema in the corresponding subclavicular space.

There was also a Colles' fracture of the left radius, a fracture of both bones of the right leg in lower fifth just above the malleoli; and finally a fracture of the left side of the pelvis. By pressing the anterior superior spinous processes of the iliac bones together, it was easy to perceive greatly increased mobility with distinct crepitus, apparently from a fracture running obliquely from above downwards and from before backwards, involving the posterior part of the ilium, and the ischium.

The fractured bones were adjusted and placed in splints—but no further treatment was adopted.

Deglutition was barely possible for some hours after admission, but by 8 A. M., April 20, we succeeded in getting her to swallow about 0ss of wine whey in course of several hours. The symptoms remained very much the same, the surface, however, becoming much warmer during night, so that by 10 A. M. there was abnormal heat of skin. The pulse became quickened, and smaller, and more feeble; at 10 A. M. it was 128. The respirations steadily grew more and more gasping, laborious, and diaphragmatic.

The difference between the pupils remained, but the left was less dilated

than on admission. Once or twice she made slight movements with the fingers of the right hand. She vomited once or twice toward morning, and, according to her daughter's statement, the matters vomited contained blood. She passed both urine and feces involuntarily. Profound unconsciousness, absence of voluntary and reflex movements, slight distortion of face to the right, with paralysis of buccinators, especially marked on left side, characterized the case until the end. Death occurred at 4.35 P. M., April 20, within twenty-one hours, at the outside, from reception of the injury.

Post-mortem twenty-two hours after death. Head.—Scalp discoloured and a tumour around the lacerated wound over left eyebrow, with considerable ecchymosis of pericranium. The skull was bared for about the size of a split pea, but no fracture of external table existed. Upon removing the calvaria, most extensive meningeal apoplexy was found. This was most marked on left side, in the neighbourhood of the seat of injury, but extended over the convexity of both lobes, and posteriorly over the cerebellum and medulla oblongata. The blood was effused into the subarachnoid space, and was still fluid. There was no unusual amount of fluid in ventricle, nor any serous or sanguinolent effusion at base of brain. No fracture existed of any portion of the skull. It should be mentioned in this connection that after death several ounces of dark grumous, apparently bloody fluid ran from nostrils.

Thorax.—Right lung free from adhesions and healthy. The left lung was also free from adhesions, and presented only a small tear of its pleural investment, rather than a true wound of its parenchyma.

Upon examining the ribs of this side, they were all found to be fractured in two places, with the exception of the last two, which were broken in but one point. These fractures were seated, the one anterior and the other posterior to the arches of the ribs. The slight wound of lung appeared to have been produced by one of the extremities of the fifth rib. The pleural cavity contained no blood. The heart was in every respect healthy.

Abdomen.—Stomach distended, but healthy; liver, spleen, kidneys, and pancreas presented no morbid appearances.

In examining the parts surrounding the left side of the pelvis, there was extensive hemorrhage under the peritoneum, infiltrating the iliac and psoas muscle of that side, and dissecting forward in the abdominal wall. There was, however, no blood in the peritoneal cavity, nor any wound of that membrane. The gluteal muscles were also much ecchymosed, and in several places the muscular structure was lacerated by fragments of the pelvis.

The principal amount of injury to the pelvis was on the left side, which had sustained a comminuted fracture. The general direction of the fracture was from above downwards with a slight inclination backwards, running from the crest of the ilium to the ischiatic notch. The posterior part of the ilium was broken into three pieces, and the upper rim of the ischiatic notch was split off, so as to form a falciform process of bone, very sharp at end. This, which was attached to the largest fragment of the ilium, was so displaced as to have lacerated the great sciatic nerve as it emerges from the pelvis. The nerve in one place was fully half divided, and below this for the extent of an inch and a half was extensively lacerated.

In addition to this, there was a simple fracture of both the transverse and horizontal rami of the right os pubis. There was but little displacement from the latter fracture, and a trifling amount of ecchymosis in the neighbouring tissues.

Acute Malignant Disease, affecting the Stomach, Mesenteric Glands, Lungs, Liver, and Bronchial Glands.—Dr. GEO. PEPPER exhibited the specimens and read the following history:—

Jacob Johns, æt. 56, black, married, healthy parents, of very intemperate habits, but has enjoyed excellent health, with the exception of an attack of typhoid fever ten years ago, until the 3d of March, 1866, when, after a hard day's work as stevedore, he first complained of a general feeling of weakness and vertigo; he felt no pain at that time, or in fact any symptom other than those mentioned. Since that evening he has not left his house, but was treated there by a neighbouring physician for some time. No symptoms developed themselves until quite recently, save that about six days after the first seizure he vomited once or twice, apparently only the contents of the stomach, and that his bowels, which in health were very regular, became constipated. About two weeks ago he first noticed a pain, referred to the epigastrium, which has gradually become more and more severe, and is described as "burning, gnawing, and shooting" in character; his appetite has been gradually failing, and his sleep poor, although he lies in a dull soporose condition all day, rarely speaking except when addressed, but then always returning rational and intelligent answers. Has had no vomiting, save that one spell referred to, but almost constant nausea. The reception of food into the stomach causes an increase of the epigastric pain.

April 11th. Very much emaciated (his wife and friends state that although never stout, he was not by any means thin, and a very muscular and well-developed man); skin of body of normal temperature; extremities cold; skin very harsh and dry; very marked arcus senilis; sight good; tongue coated with a thick yellowish-white coat, dry in centre; gums firm and of good colour. No difficulty in deglutition; no cough, no abnormal respiratory phenomena in lungs; heart sounds very feeble and faint, no murmurs, apex beat below and to the left of normal position; chest unusually resonant; pulse 96, feeble and compressible; respirations 15, regular and deep. Hepatic dulness not increased; an ill defined dulness to right of epigastrium; no tumour perceptible; percussion over the abdomen everywhere resonant. Strong pulsation of abdominal aorta, as also of both femorals; no bruit, however, can be detected. Slight tenderness over the abdomen, and a faint friction-like sensation communicated to the hand placed on its surface, also a sound resembling fine friction very closely heard over the whole surface upon the application of a double stethoscope. Bowels confined; urine free, of normal appearance, depositing a faint cloud. ℞. Potass. iodid. gr. x, tinct. gentian comp. ʒj, aquæ ʒiij, thrice daily. Ol. morrhuæ ʒij, thrice daily. Also ℞. Unguent. belladonnæ, unguent. iodin. comp. ää ʒss. Apply over whole surface of abdomen. Regulate the bowels by ol. ricini —good nourishment.

12th. More comfortable, extremities warm, retained medicines and nourishment very well; pain in abdomen relieved by the application. Dozes most of his time; appetite still totally absent; bowels confined; continue treatment.

14th. Weaker but more comfortable; less pain; bowels opened twice freely by the oil; appetite still very poor; belly scaphoid; pulsations of arteries very distinct. Increase stimuli.

16th. Emaciating and growing weaker; skin harsh, dry, and cool; tongue less coated; bowels quiet; urine free; pulse 96; respiration 18; vomited a dark brownish matter, ropy, and containing masses of dark

brown colour, last evening. Has shown no tendency to it since. Friction over abdomen not felt or heard with the unaided ear; epigastric dulness more marked, it seems continuous with hepatic dulness. Urine, sp. gr. 1022, acid, no albumen, no deposit. Continue treatment.

21*st*. Continued in the same condition, except that he has grown much more feeble and emaciated. He has refused all nourishment and medicine for the last two days; nutritious enemata were ordered, but neglected; has had two attacks of vomiting, of essentially the same character as the preceding attack.

He died at 8½ A. M. to-day; apparently from the exhaustion caused by a severe attack of vomiting of the same grumous fluid.

Post-mortem eight hours after death.—Body greatly emaciated, cadaveric rigidity well-marked. Brain and cord were not examined. Lungs—the right lung bound down by very firm old adhesions, and contained at apex a number of masses varying in size from one-tenth to one-fourth inch in diameter, of a pale yellowish colour and quite firm and resisting. The remainder of the lung as well as the whole of the left one was healthy and crepitant throughout, although pale and anæmic. The bronchial glands were greatly enlarged, and on section presented a pale yellow colour varied by large patches of melanotic deposit.

The heart was healthy; spleen healthy, but very small; kidneys normal, but very pale.

Liver of about the usual size, intensely congested, and contained a considerable number of small yellowish nodules varying greatly in size, the largest being about the size of a pea. These were situated both superficially and scattered throughout the gland structure. The gall bladder contained a small amount of healthy looking bile.

Stomach large; distended with the same grumous fluid which had been vomited during life. The mucous membrane appeared healthy everywhere except at the pyloric extremity, where, in addition to an entire destruction of the mucous membrane, there was an almost complete occlusion of the orifice by a scirrhous mass which entirely surrounded it. The stricture was so close as to admit with difficulty the passage of a small bougie; pancreas healthy.

Mesenteric glands were much enlarged, some of the larger being the size of walnuts. The glands of the mesocolon and mesorectum were but slightly enlarged.

Intestines slightly contracted, but otherwise apparently healthy; although not opened. Peritoneum smooth over whole extent.

Microscopic examination.—The matter taken from the stomach consisted of blood-globules, granular cells, clearing up on the addition of acetic acid with free nuclei; granular matter, and epithelium apparently the remains of the destroyed mucous membrane. The mass surrounding the pylorus consisted of free nuclei with nucleoli; fusiform cells of large size with one and two nuclei, a few large caudate cells with nuclei and nucleoli, the whole contained in fibrous stroma. The masses from the liver contained cloudy hepatic cells; indistinct cells with nuclei and nucleoli, granular matter, &c. The mesenteric glands seemed to consist entirely of numberless free nuclei with nucleoli (about the size of blood-corpuscles). The enlarged bronchial glands presented indistinct cells with nuclei and nucleoli, much granular matter and free nuclei. The masses at the apex of the right lung consisted of large mother cells, with contained cells with

nuclei and nucleoli; free nuclei with nucleoli; large fusiform cells with one and two nuclei and granular matter.

May 9th. Punctured Wound of Orbit—traversing the orbit and entering brain. Death from hemorrhage into skull.—Dr. WM. PEPPER exhibited the specimen and gave the following history:—

Nellie Taylor, æt. about 18, a prostitute by profession, was carried to Pennsylvania Hospital, April 25, 1866, at about 10½ P.M. Half a hour previously, whilst at corner of Sixth and Middle Alley, she attacked three negresses, who were passing and provoked her by some remark. A young girl who was with her at the time states that she followed the women to the middle of the street, when blows were interchanged, and the patient immediately returned to her side saying that her eye was "coming to pieces." Her companion also noticed slight twitchings of the extremities. They walked together about a half-square, when the patient sank upon her knees, and then fell upon the pavement. She became at the same time wholly unconscious, and had not spoken again.

Upon admission, her condition was as follows: A wound, about half an inch long, and apparently inflicted by a sharp-pointed, narrow-bladed knife, was found over right eye a little to the outside of the internal canthus. A probe introduced into this readily detected that the rim of the orbit was bared and a small fragment of bone chipped off. From this point the probe glided off a considerable distance in the direction of the roof of the orbit, but it was difficult to say whether it passed along the under surface of the roof or entered the skull through a small orifice in the frontal bone. There had been very little hemorrhage externally. There was already some ecchymosis of the upper eyelid, but no discoloration whatever of subconjunctival cellular tissue. The pupils were moderately dilated, the right one more so than the left, and entirely insensible. The pulse was 60 in the minute; respiration 32, regular, though jerking. There was no evidence of paralysis of any part of the body or face, but, on the contrary, the extremities were in a state of violent spasmodic convulsive movement with a strong tendency to carpo-pedal contraction. No involuntary discharges had taken place, but within half an hour after admission she vomited freely with considerable effort. Deglutition was impossible. A large blister was applied to back of the neck, and a turpentine enema administered, which was retained.

April 26, 1866. 10 A.M. Her condition through the night has remained much the same. The vomiting has not recurred, but there has been involuntary discharge of urine. The convulsive movements have continued so violently that it was necessary to tie her legs. This morning her unconsciousness remains profound, it being impossible to arouse her in the slightest degree. The head and feet are now fixed in marked carpo-pedal contraction, and yet the arms and legs are frequently, and to all appearance symmetrically, convulsed. These movements consist in adduction and inward rotation of these members. There is at the same time some rigidity of the arms and legs. Reflex movements can be aroused in all parts of the body, though less readily than in health.

There is great ecchymosis of the eyelids, but not a trace of subconjunctival hemorrhage. The pupils are both dilated, the right one more so than the left, and insensible to light; the eyeballs are in a state of constant oscillation. There has been no hemorrhage or discharge of brain substance from external wound. The pulse has been up to 132, and is much smaller; the

respirations are 48 a minute, and the temperature of the body, as measured in left axilla, 103°.

6 P. M. Pulse 148 in a minute; respirations 34; temperature in left axilla 102⅔°. Her condition has remained very much the same, save the gradual failure in powers of life and the cessation of convulsive movements. There is now only an occasional twitch of the extremities, which still continue in a state of carpo-pedal contraction. Reflex movements have almost entirely disappeared, though it is still possible to arouse some muscular contraction. Her urine and feces have both passed involuntarily. Deglutition is almost impossible. During the day, an unusual modification of respiration has come on somewhat of this character. The respirations are principally abdominal, to judge from the very great elevation of the abdominal walls with great lateral movement of the lower part of the thorax. Upon closer examination, however, it was noticed that during *inspiration* there was violent contraction of both the sterno-cleido-mastoid and trapezius muscles with a moderate elevation movement of thorax; slight expansion of upper part of thorax, but considerable lateral expansion of the base of the thorax accompanied by *retraction* of the abdomen. During *expiration*, on the other hand, the base of the thorax contracted, the entire thorax descended, and the abdomen was markedly *elevated*. During this expiratory act, by placing the fingers under the margin of the ribs, a violent spasmodic contraction of the diaphragm was readily detected. There was at this time no evidence of imperfect aëration of the blood. She constantly, however, expels a tenacious froth from her mouth during expiration.

27*th*, 10 A. M. Pulse now beats 150 in a minute; the respirations are 57; the temperature in left axilla 104½°. During the night the respirations have continued of the same character, though steadily becoming more gasping and labored. There is marked ecchymosis of skin around right orbit, but not a trace of subconjunctival hemorrhage. Neither is there any discharge from ears or hemorrhage into pharynx. There is constant oscillation of the eyeballs with dilatation of the pupils, the right one being still rather the more dilated. There has been no recurrence of vomiting. Urine passes involuntarily. There are now marked cyanotic symptoms; the lips and extremities being livid, and the loud snoring râles throughout the chest indicating great accumulation of secretion in the air-passages. The skin is bathed in sweat, and the whole surface presents the condition of marked cutis anserina. The respirations are now stertorous, and accompanied by flapping of both cheeks. There is complete cessation of all movements of the extremities, and it is impossible to arouse any reflex actions.

The parts over which the bandage was applied to restrain her legs are deeply ecchymosed and excoriated. Death occurred at 12 M., 38 hours after injury, without any further phenomena.

Post-mortem four hours after death.—Marked rigor mortis. Spine not examined.

Head.—The scalp was dissected up, and the knife was found to have struck upon the orbital ridge of frontal bone near the right inner canthus, to have clipped a small piece of bone off, and thence to have been deflected so as to traverse the orbit in a direction backwards, outwards, and very slightly downwards, entering the skull through the posterior wall of the orbit, external to the optic foramen, and between the greater and lesser wings of the sphenoid bone. The blade, which must have been a narrow and rather long one, then entered the anterior part of the middle lobe of the right

hemisphere, penetrating to the depth of at least one inch. In its passage through the orbit, it had kept close to the roof of the orbit, and consequently had avoided injuring any of the tunics of the eye or the optic nerve. There was a moderate degree of infiltration of the fat and connective tissue at the posterior part of the orbit, but no considerable hemorrhage. In piercing the meninges of the brain, it had opened a large vein, so that a large clot was found compressing the superior and external portions of the anterior and middle lobes, and, in addition, a large amount of blood was found to have followed the lower face of the middle lobe, and found its way under the tentorium, thus compressing the structures at the base of the brain. There was no unusual amount of fluid in the ventricles. The wound of the middle lobe was parallel to the roof of the hippocampus major, and separated from that cavity by merely a thin layer of brain substance. No blood, however, had entered the right ventricle. The brain substance was considerably lacerated and broken down around the wound, forming a small cavity filled with grumous blood.

The *Skull*, probably from her youth, presented scarcely a trace of frontal sinuses.

Thorax.—The blood throughout the body was dark, and formed, soon after escape from vessels, large soft dark clots.

The *Heart* was distended, especially on right side, with dark blood mixed with soft currant-jelly clots. Healthy in structure. Very little pericardial effusion. It was somewhat dislocated by tight-lacing.

Lungs deeply congested throughout. No pleuritic adhesions or effusion.

Abdomen.—Liver large, but much distorted by tight-lacing, being much increased in its vertical diameter.

This organ, as well as the spleen and kidneys, was deeply congested.

Uterus.—Fallopian tubes and ovaries were also intensely congested, the Fallopian tubes in particular being turgid with blood and of a deep purple colour, evidently from chronic congestion resulting from the assiduous practice of her vocation.

May 23d. Penetrating Wound of Abdomen, traversing both walls of Stomach and the left Kidney. Death from hemorrhage in 4½ hours.—Dr. WM. PEPPER presented the specimen and gave the following history of the case:—

Thomas Moultrey, admitted to Pennsylvania Hospital at five P. M., November 21st, 1865, in a state of profound collapse. About half an hour previously he had been stabbed with a sheath-knife having a blade at least eight inches long. The blow was given as the men stood facing each other, the knife entering the body on the line of the nipple in the seventh interspace, directed almost immediately backward. The wound bled freely externally, and soon after its reception he vomited a large quantity of undigested alimentary matter with much liquid blood. On admission, he presented all the symptoms of severe internal hemorrhage; the surface cold and moist; pulse very small and feeble, respirations irregular and sighing; frequent jactitation, with sunken features. The external wound gaped quite widely, and, at each effort at emesis, gas, blood, and some alimentary matter were forced out. The blood vomited was principally fluid. His respirations were rapid, shallow, and gasping, the diaphragmatic element impaired, but not extinct. The heart's action was feeble, frequent, and its sound almost inaudible. The pulmonary resonance was good; the stomachic tympanitic sound was found altered, having much less volume

than in ordinary empty condition of the organ, and high up under the ribs. Percussion note over lower part of abdomen was humoric up to line of umbilicus. There was considerable thirst. He was freely stimulated by means of rectum, and also took morph. sulph. gr. j; but soon after admission he sank into a condition of stupor, from which it was difficult to rouse him to answer questions, and which was broken only by occasional convulsive movements, or by spells of hæmatemesis, of which five or six occurred. His pulse soon became extinct at the extremities. No discharge of either urine or pus occurred. The countenance was hippocratic, the surface cold and damp, and death occurred quietly at 9 P. M., 4½ hours after the reception of the wound.

Post-mortem, thirteen hours after death. — Moderate rigor mortis. *Brain* presented no serous effusion either into ventricles or around base; nor did it show any abnormal condition whatever in regard to its vessels.

Heart.—There were about two ounces of pericardial effusion. The heart was quite firmly contracted, containing a moderate quantity of unnaturally fluid blood, and no firm clots. The knife had not entered pericardial cavity.

Abdomen.—*Liver* appeared somewhat enlarged and extended well over into left hypochondrium, but had escaped injury.

Stomach was found high up under ribs, only slightly distended, but still rotated upwards, as after a full meal, so that the knife had entered its anterior wall near the greater curvature, and had traversed the organ, emerging at a point much nearer the lesser curvature. The wounds were about five-eighths of an inch long, the edges shelving, with very little protrusion of the mucous membrane. It contained some alimentary matter, undigested, and fluid and clotted blood.

The intestines were moderately distended; the colon contained a large quantity of feces, the small intestine contained all the results of digestion in its various stages, but in no part was there any blood.

The left kidney was also penetrated by the knife, toward its superior extremity; the anterior wound being angular, whilst the posterior was simply linear. There was considerable ecchymosis of the connective tissue surrounding it. The urine was not examined. The abdominal cavity contained a large quantity of fluid blood, which had gravitated somewhat into the pelvis, but was still found in all parts among the folds of the mesentery. There was a nick in the head of the eleventh rib. The course of the knife therefore was to enter between the seventh and eighth ribs in a direction almost directly backwards, penetrating the stomach and the left kidney, and expending the little remaining force on the head of the eleventh rib.

Gall-Stone of Cholesterine extracted from the Rectum during Life. —Dr. S. W. MITCHELL presented the specimen with the following history and remarks:—

On the early morning of February 1st, 1866, I was asked to see a lady, æt. 69, who was suffering with vomiting and colic. Her previous history was as follows: Until about eight years ago she had enjoyed consummate health, excepting that she had now and then, perhaps twice a year, attacks of bilious colic, with pain in the right hypochondrium, and vomiting. I do not think that any of her colics were so violent as I have seen them in others, if we omit one which took place about eight years back, and was for a long time the last. It was extremely severe, but neither after this nor the former attacks had she any noticeable jaundice. Again, about three

years ago, my patient had a very violent bilious colic, with no marked jaundice, but followed by much prostration. In all of these illnesses I attended her. In no case had she high febrile symptoms, a point to be recalled in connection with her after history. Between the date of the attack in 1863, and that of her final sickness, she was uncommonly well: a rather spare, fresh-looking, energetic person, capable of enduring great fatigue, and, excepting some slight functional troubles unconnected with digestion, in entire health of body and mind.

At one P. M., February 1, 1866, she eat a lunch of corned beef and bread and butter, with a glass of wine, and immediately after went out, attended to some business, and returning at six P. M., was seized with nausea and vomiting, which continued up to the time of my visit, three A. M., next day. The matters cast up were undigested food, and then yellowish mucus smelling faintly of sulphuretted hydrogen. This odour disappeared after I used creasote water in drachm doses; but neither this agent nor any other abated the vomiting until the afternoon of February 2d, when it moderated, and was never afterwards so violent or so frequent. The pain with which her attack began was not fixed; somewhat later in the case it occupied the region of the small intestines. As I kept no notes at the time, I am unable to give her history, day by day; but its prominent features are clear in my memory, and these I shall state.

Her sickness began on February 1st; it ended in death at ten A. M., February 11th. The vomiting, after the second day, consisted merely of regurgitation of food, and there was no retching. During the last four or five days of her life that symptom was unimportant. Her bowels were obstinately bound, so that she had no passage until the sixth day, despite the use of calomel in eight grain doses, croton oil, other milder agents, and numerous injections. They were opened at length by a full dose of castor oil, and were at the close so loose as to need opium suppositories. Throughout, there was a moderate amount of tympanites. It was certainly never extreme. During the first few days she passed her water involuntarily; later in the case, and up to the end, it required to be removed by catheter. It contained no albumen.

The circulation was feeble throughout, and as she had a well-marked arcus senilis and a weak cardiac impulse, I suspected that a portion of her feebleness might be due to a fatty heart.

The treatment was chiefly sustaining, and for several days she was nourished and stimulated by rectal injections, until the stomach became able to endure small amounts of food.

On the seventh day a rectal catheter was introduced to relieve the bowels of gas. It struck a hard body which was withdrawn by a forceps, and proved to be a large gall-stone. How long it had been in this position I cannot say, probably only since the passage, within which period of twenty-four hours she had had tenesmus and irritation of the rectum. The most remarkable feature of this illness was the mode in which she twice lost her strength, so as to be despaired of, and again revived. On the first occasion, which preceded the removal of the stone, she became pulseless in one wrist. The heart beat was barely perceptible in the other, and numbered 150. She was cold to the knees, and wandering in mind, yet came out of this state so far, spontaneously, as to make us renew the use of the stimulants we had dropped in despair. She finally died from asthenia without pain or struggle.

The absence of notes has compelled me to state the case as I have done.

It may be thus summed up: An attack of putrefactive vomiting and colic; obstinate constipation; pain reduced by second day; bowels moderately moved on sixth day; stomach less and less irritable; tendency to sink; repeated rallies; stone removed from rectum on seventh day; death apparently from want of cardiac power on the tenth day.

At first I diagnosed the disease as an attack of indigestion, with putrefactive state of contents of stomach. I supposed that these conditions accounted for the congestion of this organ which I presumed to exist, while the extreme effects produced by the vomiting I referred to the fact that the heart was probably fatty and inefficient as a circulating power.

I set aside as false the idea of hernia or of absolute obstruction, for, as to the first, there was no rupture; and as to the latter, the pain was not great enough; nor was the tympanites and tenderness such as to warrant this belief.

When the stone was removed I, of course, altered my opinion. I could not conceive that this large mass had been passed through the gall-bladder during this attack, and I therefore was driven to suppose, either that it had escaped long before from the gall-ducts, when small, and had increased in size in the intestines, or that it had at a former period ulcerated a path into the duodenum, and remained without increase of bulk in some part of the intestinal canal for a period of time whose length I could hardly suspect.

Twenty hours after death I made the autopsy, whose results were witnessed by my friend Dr. Packard. I desired first to see where the calculus had lodged during its stay in the intestines. I therefore examined the canal from the rectum to the bile-duct with unusual care. The curve of the duodenum was a little thickened as if by submucous deposit. It was also gray and black in spots, and contained points which were more vascular than elsewhere. The rest of the intestines was healthy, and contained a good deal of thin fecal matter. In the great intestine it was more firm, but nowhere very solid or impacted. The stomach was intensely congested, and its membranes were very dark and grayish in spots, especially along the greater curve. There was no ulcer, and there were no cicatrices of old ulcers. The liver was of the usual size. The fissure commonly occupied by the gall-bladder was bridged over with a mass of dense white membrane as hard as cartilage. Through it ran a ragged, tortuous passage the size of a goose quill, which opened into the duodenum. This canal was black, rough, irregular, and dotted with minute bits of cholesterine and pigment. Into it opened the hepatic duct, and through it the bile reached the intestine. The opening into the duodenum was about three lines wide. It was a strong open ring of tissue, with firm everted lips, and from it the ducts narrowed as they left the intestine. Four lines of white tint a half inch long, and a little elevated above the intestinal surface, ran outwards from this opening, and seemed to me to indicate the former existence of a tear at the places so marked.

Directly above the duct the upper surface of the liver and the fissure for the gall-bladder gave evidence of ancient and extensive inflammation which had thickened the capsule of Glisson at these parts to a quarter of an inch at least. Elsewhere the liver was healthy.

The lungs were singularly free even from old adhesions. The heart was thin and very largely metamorphosed into fat. The kidneys were normal, but the left of nearly twice the size of its fellow. All the other abdominal organs were free from disease. The nervous system was not inspected.

The stone, which I have had sawed, is nearly pure cholesterine, with the usual pigment nucleus in this case double. It has no external deposit to mark its stay in the intestines, nor was it in the least eroded by their juices.

The following seems to me to be a fair theory of the case: A calculus formed in the gall-bladder and excited there an inflammation which produced adhesions to the duodenum and gradually brought the two parts into close relation. Meanwhile occurred the frequent colics of past years, occasioned by the efforts to pass the stone or by passage of smaller calculi. At all events we must suppose some such condition and some such relief, for at no time had she well-marked jaundice. Finally, when the stone had partly ulcerated through the wall of the intestine, some sudden and violent act of vomiting drove the calculus into the duodenum, effecting the tear whose scars were seen to radiate from the mouth of the open canal. The after changes consisted in the narrowing and complete atrophy of the gall-bladder and in the partial healing of the torn mucous membrane.

It appears to me that this theory accounts for all the circumstances of this remarkable case, of which not the least notable feature was the long sojourn of the stone in the intestines. It must have entered them three or eight years ago, no other attacks save such as happened at these dates having been severe enough to be the results of the rupture of the duodenal wall.

Where the stone rested in the bowel I cannot say. Perhaps in the curve of the duodenum at the point where I noticed thickening, precisely at the elbow in the intestine. In fact the symptoms of obstruction could only have been occasioned by temporary stoppages in the small intestines, so that it must have been high up the bowel.

From the appearance of the stone I do not think it grew any while in the bowels, and the cicatrix of the tear showed that this must have been made by a stone as large as this one. Lastly, as regards the illness which occasioned the escape the following view seems tenable: Some accident having started the stone on its way down the intestines, its arrest here and there would account for all of the symptoms, the pain, the constipation, the checked digestion, and the vomiting of thin, ill-smelling substances at intervals.

June 27th. Gunshot Wound of Shoulder; Fracture of Scapula; Infiltration of Muscles of Back; Sudden Death.—Dr. WM. PEPPER exhibited the specimen and gave the history of the case.

John Mealy, æt. 30, admitted to Pennsylvania Hospital June 2, 1866. A few hours before admission he was wounded in the left shoulder by a wad discharged from a musket, the load containing no ball.

The wad as removed from the wound was about the size of an English walnut; and was found to have penetrated the muscles over the scapula, fracturing and comminuting that bone, and partially imbedding itself beneath the body of the scapula, so that but one-half of the wad could be removed at the time of admission.

The man's condition remained quite good for several days, but the discharge from the wound became sanious and offensive, and burrowed more under scapular muscles; and the whole left side of the thorax, anteriorly and posteriorly, became highly emphysematous, although there was no evidence of the thorax being wounded

Towards the close of the first week, he showed signs of exhaustion from

the drain, but he had evinced no symptom which excited alarm, when on the ninth day he died suddenly without having made any unusual exertion. His death was preceded for a few minutes by symptoms of great oppression.

Post-mortem three hours after death. Brain.—Parts of meninges were somewhat congested, apparently more so on right side than the left; there was slight effusion in ventricles.

Thorax and *lungs* were congested and œdematous posteriorly, but presented no wound nor any evidence of traumatic pneumonia. There were a few old adhesions on right side, and on left evidences of marked pleurisy in the form of strong adhesions and a layer of false membrane, œdematous and flesh coloured, extending from spine almost to anterior mediastinum over the whole inferior lobe. There was no serous effusion nor any very marked congestion of the pleura, but the appearances of the false membrane seemed to indicate a somewhat recent attack of membranous pleurisy. There was, however, not the slightest wound of the thoracic cavity detectable.

The heart was healthy in structure, but was distended with clots. On the right side these were soft and dark and evidently of recent post-mortem formation, whilst the clot contained in the left cavities of the heart was whitish and firm, and extended from the ventricle, where it was firmly attached to the chordæ tendineæ and muscular fasciculi into both the auricle and aorta, so as to seriously impede the proper action of their valves.

The abdominal viscera appeared healthy.

The tissues in the neighbourhood of the wound were infiltrated with serous pus, but there was no such decomposition, apparently, as would account for the extensive emphysema of the left side of the thorax which was noticed during the last days of life. The remaining half of the wad was found imbedded beneath the scapula. The fracture of the scapula involved the body of the bone both below and above the spine, and was radiating and comminuted in character.

The points of the case which appear most worthy of observation are:—

1st. The nature of the missile in connection with the extensive injury to the soft parts and bone.

2d. The cause of the emphysema, in the absence of any wound of the lung.

3d. The cause of death, and the medico-legal inquiry which might be based upon the occurrence of sudden death in the progress of a case of apparently not serious prognosis.

REVIEWS.

ART. XVII.—*Parturition and its Difficulties. With Clinical Illustrations and Statistics of* 13,783 *Deliveries.* By JOHN HALL DAVIS, M.D., F.R.C.P., &c. Second edition revised and enlarged. 12mo. pp. 354. London: Robt. Hardwick, 1865.

THE first edition of this work by Dr. Davis appears to have received so much attention as to induce him to prepare a second revised and enlarged one. Perhaps, therefore, it may be regarded as a representative of English obstetric practice at the present time, as well as of the principles of obstetric science in Great Britain.

The main object of Dr. Davis is to represent, by the display of cases, the dangers to mother or child during parturition. That his object may be gained he details his views of natural and then of difficult and complicated labour. "Difficult parturition" is of two kinds, "powerless" and "obstructed" labour. By the first of these is understood "defective power in the agents of labour," and by the second "inordinate resistance to those agents." These are treated of in the present work; he reserves for another publication the history of complicated labours, including hemorrhages, descent of the funis, convulsions, &c., although many interesting cases of these complications appear in the present work.

We propose to give a rather cursory analysis of the opinions and reports of Dr. Davis, with the view of exhibiting some of the peculiarities of British obstetric science, as compared with the doctrines maintained in this country, and also on the continent of Europe. We may venture also to make some criticisms on the practice of Dr. Davis, although this will be done with great diffidence, inasmuch as Dr. Davis has certainly been eminently successful. Few obstetricians can assert that out of 13,783 deliveries, he lost but 31 women, or 1 in 444; and out of 13,916 children, there were only 537 still-born, or less than 4 per cent.; and many of these were, of course, unavoidable, being entirely beyond the control of the practitioner.

Dr. Davis does not, of course, present his views in full of the natural mechanism of labour, even in cranial presentations. On page 39, before speaking of forceps deliveries, he intimates his partiality for Prof. Naëgele's views on this important subject, and pays the high compliment to the German professor as being the first to systematize the facts till then ascertained, and asserting that it was not until the publication of his "Essay on the Mechanism of Parturition," in 1818, "that we could be said to have attained to a proper knowledge of this important object." We cannot indorse these opinions of Dr. Davis, and most English obstetricians, of the superiority of the German school; we have no hesitation in believing that the mechanism of labour, as taught by Solayre, Baudelocque, Velpeau, and Cazeaux, is far more accurate both generally and in details, than that taught by Naëgele. The discrepancies between the German and the French school are considerable, and we in America have been inclined in favour of the latter, at least so far as we have diverged from British writers whose

authority was once paramount in our country. We believe, for example, that it is not the occipito-frontal or long diameter of the cranium which in natural labours is parallel to the oblique diameter of the superior strait even at the commencement of labour; that the bi-parietal diameter is not oblique to the brim or superior strait, but is parallel to one of the oblique diameters of this opening; that the vertex, or region of the posterior fontanelle, and not "the posterior and superior quarter of the parietal bone," is the true presenting part; that the caput succedaneum does not represent the presentation, but merely, in most cases, that portion of the head which is detained opposite the orifice of the vagina, where it receives no support from the pressure of the surrounding tissues; and, moreover, that wherever the head is of the normal size, and there is even moderate resistance at the outlet of the pelvis, as in primiparous labours, the bi-parietal diameter will become parallel to the transverse diameter of the inferior strait, and to that of the os vaginæ, and not oblique as maintained by Naëgele.

We object also very seriously to the simplicity of Naëgele's division of presentations, for which he has been so much commended; the reduction of all presentations of the head into cranial and face, is, we think, a dangerous error. Certainly there must be an essential difference whether the great extremity of the head descends first, presenting the cervico- or sub-occipito-bregmatic diameter, or whether the top of the head, as represented by the anterior fontanelle, occupies the central line of the pelvis, involving the occipito-frontal diameter, which often measures four inches, and not unfrequently four and a half; yet this is neglected by Naëgele and his admirers who think it makes little difference in the progress of labour whether the anterior or posterior fontanelle occupies the central portion of the pelvis. True it is, that this difficulty is often overcome by the natural effort; but it is usually at the expense of great suffering on the part of the mother, protraction of the labour, and increased danger to mother and child; while, in some instances, as in a complete arrest of the head followed by its impaction, the death of the infant, and it may be that of the mother; all this because the presentation of the anterior fontanelle is confounded with that of the posterior, and no flexion was induced to change the former, or unnatural and difficult presentation, into that of a vertex or natural presentation. We must acknowledge our surprise that the importance of understanding the true mechanism of labour in this abnormal presentation of the anterior fontanelle or sinciput, as distinguished from that of the posterior fontanelle or occiput, should be so completely disregarded by British obstetricians. Even M. Cazeaux in his most admirable system of midwifery, although he recognizes theoretically and often practically this presentation, yet too often disregards it at the bedside, inasmuch as he recommends the use of the forceps in presentations of the sinciput, thereby running many risks for the child and parent by attempting to force down the long cranial diameter parallel to the diameters of the straits. More than forty years ago Dr. Dewees well observed "*that this is no case for the forceps.*" A favourable change should always be produced by means of the fingers, the hand, or the vectis, so as to convert the presentation of the sinciput into that of the occiput. In an edition of his work published in 1825, Dr. Dewees gives so graphic an account of the perplexities of a young practitioner in a case of labour "obstructed" from this cause that we cannot refrain quoting it at length, trusting that the valuable information communicated by Dr. Dewees to those who, like ourselves, were obstetric students half a century ago, may

prove equally beneficial to those of the present day, if not to their medical teachers.

"Mrs. —— was under the care of a young practitioner of midwifery, with her fifth child. She was attacked early in the morning; her pains were strong and frequent, and every expectation was entertained that the patient would soon be delivered. The head of the child had descended to the inferior strait, but after a short period the head was found not to advance. Her friends now proposed a consultation. I was sent for, but did not arrive till after eleven o'clock P. M., and by the time I saw the patient seventeen hours had elapsed since the commencement of the labour, which until now had rarely occupied two. The gentleman in attendance declared he could not possibly conceive the reason of this very unusual delay, and begged I would examine the patient. This I did; and found the case to be the too early departure of the chin from the breast, as represented in the second situation of this presentation [that is, with the anterior fontanelle on the perineum, the forehead to the right side, the occiput to the left, and the parietal protuberance towards the orifice of the vagina]. I gave my opinion to the doctor, and tried to explain the mode of remedying this malposition. He undertook the operation under the persuasion he understood it; and I was anxious he should, as he was a particular friend of the family, and was just getting into obstetrical business. He, however, pretty quicky abandoned the side of his patient, and earnestly requested I would do what was necessary. I had the patient properly placed, and introduced my hand under the head of the child, and raised it up to a sufficient height, and then sustained the forehead until a pain came on; the first two pains did not bring down the vertex, as I had hoped, owing to the very firm contraction of the uterus upon the body of the child. I now directed the head more towards the right sacro-iliac junction, and had the satisfaction, upon the accession of the third pain, to have the vertex descend properly. I withdrew my hand, and the head was delivered the next pain to the great joy of the mother, the safety of the child, and the astonishment of the doctor."

That the success of Dr. J. Hall Davis's practice, great as it appears to be, would have been still greater if he had drawn the distinction in his operations between the presentations of the sinciput and occiput, we have no doubt. Nevertheless, it is very difficult, from the details of his cases, to specify what were or were not original presentations of the anterior fontanelle. This difficulty arises not merely from the fact that he includes all under the head of cranial presentations, but especially from a great want of accuracy (we beg pardon) in specifying the position of the head in the straits and cavity of the pelvis. Thus, on page 42, he says that the small (or posterior) fontanelle is directed to the left acetabulum, while the anterior fontanelle is towards the right sacro-iliac synchondrosis. A moment's reflection will show that this is an impossibility, for both these fontanelles are on the superior portion of the cranium, and therefore, if the posterior fontanelle is towards the acetabulum, the anterior fontanelle must be near the centre of the pelvis, while the chin would be at the opposite synchondrosis. This would involve the occipito-mental diameter. If the occipital protuberance was at the acetabulum, then the nose or the forehead would be at the opposite symphysis; or if the base of the occiput be at the acetabulum, then the anterior fontanelle would be at the opposite point of the brim. In the former case the occipito-frontal, while in the latter case the cervico-bregmatic diameter would correspond to the right oblique. In Case LIII. the position of the head is described "small fontanelle behind the right ramus of the pubes" (of ischium?); "the sagittal suture directed in left oblique diameter; large fontanelle to left sacro-iliac synchondrosis." Certainly if the posterior fontanelle were at or near the right ramus of the pubes, the anterior fontanelle would be opposed to the region of the os

coccygis, and the forehead or face toward the left sacro-iliac symphysis; or if the anterior fontanelle were towards the left synchondrosis, the sub-occipital region of the head would be opposed to the ramus of the ischium. Again—it is stated in Case XLIX. that the right ear of the child is "behind the pubes," and "the face therefore to the right acetabulum." This may be very correct language if, under the expression "behind the pubes," Dr. Davis includes any portion of the pubic bones extending from the right to the left acetabulum anteriorly; but if by these words the body of the pubis be understood, which we thought was the usual acceptation, the description is inaccurate. The looseness of this expression will be more manifest by comparing this last example with Case XXXIV., where it is stated that the right ear is behind the symphysis pubis and the face towards the right ilium; and also with Case LXXXIX., where it is stated that when the "left ear (is) behind the symphysis pubis, the occiput (is) towards the right acetabulum;" while in Case XC. the "left ear (is) behind the symphysis pubis, face to left acetabulum."

This want of precision is also evinced by Dr. Davis in using the word "*face*" almost invariably to represent the direction of the anterior portion of the head, instead of specifying whether it be the chin, forehead, the region of the bi-frontal suture, or that of the anterior fontanelle.

Any physician well instructed in the French or American schools would take it for granted that most of the normal presentations of the "cranium" or those of the vertex, as described by Dr. Davis, would be, in reality, abnormal. For it results, that if the face be towards the right synchondrosis, the projection of the occiput would be at the left acetabulum, and the anterior fontanelle would present at the centre of the pelvis; and, of course, the occipito-frontal or long diameter of the cranium would be concerned. In natural labours, however, after the forcing pains have taken place, it is the top of the os frontis, as represented by the bi-frontal diameter on the anterior fontanelle, which corresponds to the right synchondrosis, while the base of the cranium or sub-occipital region is towards the acetabulum. Thus, the cervico-bregmatic or short diameter of the cranium is involved, and not the long one; the face is, therefore, not *at* but *above* the right synchondrosis in favourable presentations of the cranium. These facts are so easily demonstrated by a simple inspection of the cranium, and their practical importance so great, that we must express our astonishment, that what has been theoretically and clinically taught by Baudelocque, Dewees, &c., should be, in a great degree, ignored by Prof Naëgelé and his followers. Dr. West, however, has recognized at least some of the positions of the anterior fontanelle presentation, as he speaks of the "fronto-cotyloid position" as distinct from the "bregmato-cotyloid position;" and very wisely recommends the lever over the occiput, and not the forceps for their management.

For these reasons we cannot form a precise idea of many of the cranial presentations, which Dr. Davis describes, but we shrewdly suspect that many were examples of presentation of the large bregma, and not of the small. Take for example Case LX., multiparous patient, where the head had been arrested, and the waters had been evacuated four hours before Dr. Davis's visit, the face being "to left ilium." The oblique forceps were applied, but slipped; a modification of Smellie's long forceps was employed, by which rotation and delivery were effected. The caput succedaneum was found to be very large, and situated "on anterior superior quarter of left parietal bone, extending over large fontanelle." This un-

usual position of the tumour of the scalp, in conjunction with the arrest of the head, and the declaration that the *face* was towards the left ilium, justifies the supposition that the arrest was owing to the occipito-frontal diameter being concerned, and not the sub-occipito bregmatic. In other words, it was a presentation of the anterior, and not of the posterior bregma. Therefore, we can explain the slipping of the oblique forceps, the greater efficacy of the long forceps in causing rotation and flexion, as well as the cause of the arrest and death of the infant. We would surmise that the whole of this difficulty might have been avoided by a timely operation with the fingers alone or with the vectis, so as to cause flexion and rotation, thus altering an abnormal into a normal presentation. Take also Case XLIX., second labour, head high up, arrested for six and a half hours at the brim with face towards "*right acetabulum*," delivery with the oblique forceps of a living child. In this case, no deformity of the pelvis existed, the os uteri had been dilated six and a half hours, and the face was said to be towards the right acetabulum, fourth cranial position of Naëgele. Why did not the head descend? for if flexion existed, the cervico-bregmatic diameter could readily pass, corresponding to the left oblique; but Dr. Davis supposes the delay was occasioned by the fact that the postero-rotation of the face had not taken place. This is unsatisfactory, as descent of the head was not impeded, in such cases, by the want of the rotation; for all authorities notice the fact, that in the occipito-posterior position, rotation readily occurs, either anteriorly or posteriorly; and, moreover, the process of rotation very universally ensues not at the brim of the pelvis, but in its cavity, and even, according to M. Cazeaux, not until the head presses on the muscular floor of the pelvis. Our supposition, therefore, would be that the head was arrested because the forehead was towards the right acetabulum, and the occipital protuberance towards the left synchondrosis. The indication, therefore, would be to increase flexion, that the cervico-bregmatic diameter might correspond to the left oblique of the pelvis. This flexion, and the subsequent rotation of the occiput anteriorly might have been effected by means of the vectis.

In Case XXXIV. the cause of the "arrest," and not impaction, at the brim of the pelvis for ten hours, the os uteri having been dilated about eleven hours, in a primiparous patient is not explained satisfactorily. Dr. Davis attributes it to the pelvis being rather small, and the head larger than usual, the child weighing nine and a half pounds; but, as the infant was born alive, there could have been no great disproportion between the size of the head and that of the pelvis, and as the transverse or longest diameter of the brim was concerned, and as Dr. Davis says the *face* was towards the "right ilium" and the "right ear behind the symphysis pubis," it may rather be presumed that here also the delay was owing to the want of flexion, which might readily have been reduced by the vectis, with much less irritation and delay than by the use of the oblique forceps at the superior strait, their subsequent removal, and the application of the common forceps in the cavity of the pelvis. Considerable pelvic inflammation supervened three days after delivery, rendering the free use of the lancet, &c. necessary.

In Case XXXV. there was also a delay of the head at the brim of the pelvis for five hours, the os uteri having been dilated for nine hours, in a primiparous patient. It is stated that here also the *face* was "to right ilium." There appears to have been no disproportion between the head

and the pelvis; the child was readily delivered by the forceps alive. What was the cause of the arrest? Was it a deficiency of flexion?

Case XXXIX. is doubtless one wherein the difficulty arose from want of flexion; it was what Dr. West would term a "fronto-cotyloid position," or, we should say, a presentation of the anterior fontanelle, where rotation was imperfect: the "left brow and eye being behind the pubes," the occiput towards the right portion of the sacrum, the anterior fontanelle towards the centre of the pelvis; the occipito-frontal diameter was therefore concerned, and the arrest of the head for seven hours was the result, notwithstanding Dr. Davis's efforts to "change the presentation;" as he now expresses it by pushing up the brow with his fingers. Not succeeding in this operation he waits three hours under the hope, he says, that the strong pains which existed might convert it into a face presentation. He then determined to employ the oblique forceps, so as to bring down the occiput, and cause the ascent of the brow.

Dr. Davis says he preferred the forceps to the vectis to change the presentation, but it is difficult to conceive how flexion could be more easily induced by the blades of the forceps acting with a compressing power, upon the sides of the os frontis and occiput rather than a vectis to depress the occiput, while the fingers pushed up the os frontis behind the pubes. The question might also be suggested whether in this case it would not have been safer to depress the chin so as to secure a face presentation, which Dr. Davis had hopes would have spontaneously occurred.

Under this head of "forceps deliveries" there are also several other cases where the head was arrested respectively for four, five, six, eight, ten hours or more, frequently without apparent cause, sometimes, it is said, because the pelvis was rather contracted; in others the head was large, or too much ossified: occasionally there was a want of sufficient pain; but in several there seemed to be no adequate cause of arrest, the os uteri being dilated, the soft parts sufficiently relaxed, and yet arrest taking place. Perhaps we may be wrong in the suggestion, that if the distinction had been drawn between the presentation of the anterior and posterior fontanelle, the cause of the arrest in some of these cases would have been explained, and by means of the fingers or the vectis, the presentation might have been favourably altered, so that no delay would have existed, and the forceps not have been required.

There is, however, another series of cases of more fearful import, in which similar questions might be agitated. Thus in Case XCII., among the "craniotomy deliveries," is a record of a difficult delivery in a primiparous patient, where there was great rigidity, labour commencing on a Thursday. There was no dilatation of the os uteri until Sunday evening at 6 o'clock. The head was found to have half descended into the pelvic cavity with the left ear and a hand beside it behind the symphysis pubis, the *face* to the left ilium. Ergot had been given in consequence of the pains having flagged, and the attending surgeon had attempted to apply the forceps, but could not make them lock. At 2 A. M. of Monday, Dr. Davis was called, found the patient in good condition, pulse 86, numerous secretions in the vagina, &c.; the hand could not be replaced. At 3.30 A. M. Dr. Davis attempted the forceps, but could only introduce one blade; therefore delivered the patient by craniotomy.

May we not again ask what was the cause of the head being delayed for some ten hours half way down the cavity of the pelvis, after the os uteri had been completely dilated, and what was the real difficulty of locking the

forceps when they were first introduced, and why the necessity for craniotomy after the second failure in the use of the forceps? The presence of the hand, between the pubis and the head, might afford a partial but certainly not a complete answer to these questions. We cannot but surmise, however, that the difficulty arose from the occipito-frontal diameter extending from one plane of the ischium to the other; it was really a presentation of the anterior fontanelle, especially as it is asserted that the "*face*" was towards the left ilium. In any case, however, there ought to have been, we think, a judicious and persistent effort made by means of the vectis, directed towards the right sacro-iliac symphysis over the occiput, so as to induce flexion and rotation anteriorly, assisted by the fingers applied to the upper and left portion of the os frontis, and thus altering the presentation, and determining the occiput forward and the face backward. Then, if necessary, the forceps could have been readily and efficiently applied, and it is possible that the dreadful alternative of craniotomy might have been avoided. Notwithstanding the great tediousness of this labour, and the arrest of the head for so many hours, the patient fortunately recovered after some pelvic inflammation, requiring venesection, calomel, and opium.

Respecting the mechanism of labour in vertex presentations, we have already intimated our entire disbelief in what Dr. Davis considers as an universally accepted fact, that the long axis of the cranium (occipito-frontal) is *parallel* to the oblique. We maintain that the head is in a state of partial flexion even at the commencement of labour, and that after the pains become forcing, flexion is so far perfected that the cervico-bregmatic diameter is parallel to the oblique diameter of the brim.

Of the progress of the head through the pelvis, the description given by Dr. Davis, although not minute, indicates very correctly the several processes of rotation, spiral motion, and extension. He acknowledges that restitution of the head spontaneously occurs, although he does not indicate the cause, neither does he notice the external rotation of the head after restitution and during the rotation of the shoulders.

In detailing the mechanism of labour in Naëgelé's third cranial or left fronto-cotyloid position (IV. of Baudelocque), or right occipito-posterior position of the vertex presentation, Dr. Davis has, we think, been very inaccurate on points of great practical importance.

He says that

> "The small fontanelle looks here to the right sacro-iliac joint of the pelvis; the large fontanelle to the left cotyloid region; the long axis of the head is parallel to the right oblique diameter, as in the first position; the left parietal bone, its tuber, and, subsequently, if postero-rotation of the face is accomplished, its posterior superior quarters are the most anterior and depending parts."

This description of the position of the head abounds with inaccuracies. If the posterior fontanelle be at or near the "right sacro-iliac joint," the chin of the child must be towards the acetabulum; if, however, as we suppose Dr. Davis meant to intimate, the occipital protuberance be at the posterior symphysis, then, not the anterior fontanelle, but the forehead would be at the acetabulum; the occipito-frontal would be parallel with the oblique diameter. But this, we maintain, is not a case of natural labour, or a presentation of the vertex or region of the posterior fontanelle; it is actually a presentation of the sinciput, or anterior fontanelle, implying more or less delay and suffering to the mother, and demanding immediate attention from the judicious and scientific obstetrician. The

accurate description would be to say that the base of the occiput was towards the sacro-iliac symphysis, and the top of the os frontis or anterior fontanelle was at the acetabulum, implying that the cervico-bregmatic diameter would be parallel to the oblique diameter, as in all other normal presentations of the vertex, and would insure a comparatively easy labour. We object, also, to the assertion, founded upon Naëgele's opinion, that the posterior superior angle of the parietal bone is the "most dependent part" of the cranium, intimating the obliquity of the bi-parietal diameter, and not its parallelism with the oblique diameter of the brim.

In describing the progress of the head, the process of conversion from the third to the second cranial position of Naëgele, in consequence of rotation of the occiput on the ischiatic plane, and the accomplishment of delivery as in an original second position are noticed; but, unfortunately, through a *lapsus pennæ*, or the carelessness of a proof-reader, "the small fontanelle and occiput" are said to be "expelled *last*." In alluding to the shoulders, it is stated that when the head has assumed, in the pelvis, its parallelism to the left oblique diameter, the shoulders "lie in the right oblique diameter of the brim." This seems to us an assumption which may possibly be true, but, ordinarily, we have every reason to believe is incorrect; for at the commencement of labour, in this third cranial position, the right shoulder is over the left sacro-iliac symphysis, and it is not to be supposed that, during the rotation of the head, the shoulder will be forced over the prominence of the sacrum and lumbar vertebræ to the right side. The teachings which we have received, confirmed by our own observation, declare that, usually, the shoulders rotate but very slightly with the head, and that they maintain very nearly the same obliquity they had at the beginning of labour. Hence, when the head is born, and the torsion of the neck is relieved, restitution of the head brings the face of the child anterior and to the left, and the occiput posterior and to the right. It results, therefore, that the right shoulder, instead of rotating from the right sacro-iliac symphysis to the hollow of the sacrum, rotates in an opposite direction from the left sacro-iliac symphysis towards the centre of the sacrum.

In describing the mechanism of the fourth or "right fronto-cotyloid position," the same inaccuracies as to the fontanelles and the diameters of the head are noticeable.

Dr. Davis acknowledges the existence of exceptional cases, where the occiput rotates posteriorly instead of anteriorly, and where the "face" is "to pubes." He asserts that, in such cases, the occiput descends to the extremity of the coccyx, and there "impinges upon it, as upon a fulcrum, and becomes a fixed point, while the face at the pubes gradually revolves outwards" and is delivered first at the vulva. We cannot receive this as correct in any point of view, as the mechanism of labour in normal cranial positions. In the first place, it is not the forehead or the face, in these occipito-posterior positions of the vertex, which come directly against the pubes, it is the top of the os frontis; while the occiput does not impinge upon the extremity of the "*sacrum*" to be retained there as upon a fulcrum; but it lies against the *coccyx*, so that, as the head progresses, the sub-occipital region of the head is towards the os coccygis, and the anterior fontanelle under the pubic arch. Hence the cervico-bregmatic diameter corresponds to the coccy-pubal diameter of the inferior strait, and not the occipito-frontal, as Dr. Davis intimates. The subsequent delivery of the head is entirely in opposition to the statements of Dr. Davis.

According to the views of the best obstetricians, the occiput, and not the face, is delivered first in these positions of the cranium. If the perineum be rigid, the os frontis is gradually, and after much laborious effort, forced up behind and within the pubis, while the occiput forcibly extends the perineum until eventually it is delivered over the posterior margin of the vulva: then the forehead, nose, and chin appear successively under the arch of the pubis.

If, however, the perineum be relaxed, it yields so readily to the pressure of the occiput, that the forehead is not forced up behind the pubis, but is retained at the arch; while the occiput passes rapidly to the vulva, so that the occipito-frontal diameter presents at the relaxed and distended orifice of the vagina, the occipital extremity taking precedence.

In our opinion, what Dr. Davis has described as "face to pubes cases," is an entirely different presentation of the head; for it is manifest if the face be to the pubis, and the occiput to the sacrum or coccyx, the occipito-frontal or long diameter of the cranium corresponds to the long diameter of the inferior strait, and that the anterior fontanelle is opposed to the perineum; in other words, to the centre of the inferior strait of the pelvis. This constitutes a presentation of the sinciput, or anterior fontanelle at the inferior strait; it is abnormal, and very dangerous to mother and child, indeed, fatal, unless a rectification occurs spontaneously, or artificially. Dr. Davis describes one mode in which this presentation is occasionally rectified by the bearing down efforts of the mother, viz: the retention of the occiput, and the descent of the face to the vulva, so that delivery is effected as in favourable original presentations of the face. Even here, we object to the expression, that the occiput impinges against the "tip of the sacrum," and is there retained as upon a fulcrum. This is not, and, we believe, cannot, be true; for just in proportion as the face descends from behind the pubis, the occiput must ascend: it is a regular process of extension of the head, no part of which is "fixed" or immovable.

The second natural mode of delivery, in these "face to pubes" cases, is under the influence of vigorous pains, long continued, for the occiput to be forced down past the coccyx to the perineum, while the face ascends behind the pubis, and delivery is effected in the manner formerly described: in other words, a conversion ensues from a presentation of the anterior to one of the posterior fontanelle with all its attendant advantages.

The practical deduction from these facts is of the greatest importance. Nature's processes ought to be imitated in all the fronto-cotyloid positions of the "*posterior fontanelle*" presentation. Every assistance should be rendered to insure the anterior rotation of the occiput and the posterior of the os frontis. If, however, rotation has occurred of the occiput posteriorly, the ascent of the os frontis behind the pubis, and the descent of the os occipitis posteriorly should be facilitated by every means in our power. If, also, there be a presentation of the "*anterior fontanelle*" at the inferior strait, it is essential that the practitioner should convert it either into a vertex presentation, by increasing the flexion of the head, or into a face presentation by causing extension. Great suffering and danger may thus be avoided for the mother, and the life of the infant may often be preserved.

Dr. Davis, after descanting upon the relative frequency of the different positions of a cranial presentation, and giving the force of his authority to Naëgele's assertion that the third is more frequent than the second, alludes to transverse positions of the head. These, he considers as "abnor-

mal;" he says they are "extremely rarely original, being derived from the *third* or *fourth* (fronto-cotyloid) positions; the head being caught, as it were, in its transition state, arrested in the course of rotation of the face from either acetabulum to the synchondrosal joint, or sacrum." We must believe that the whole of this is hypothetical; we have not the least confidence in the repeated assertion of Naëgele and his admirers, that the occipito-posterior positions of the vertex (so called fronto-cotyloid of the cranium) occur so frequently as they maintain. We have so constantly watched the progress of labour, prior to the descent of the head through the os uteri and superior strait to the completion of the process, that we must believe that original transverse positions of the head are far more frequent than the occipito-posterior. Moreover, we cannot perceive the least proof derived from theory or experience, that would confirm the singular idea that "the head" is "caught" during its transition from the anterior to the posterior part of the pelvis. We may seriously ask what there is to catch the head, to arrest the process of rotation. Certainly, it is not in the os uteri, neither, as far as we can perceive, is it in the pelvis, for the transverse diameter at the brim is longer than the oblique, and the inclinations of the ischiatic planes towards each other from above downwards, and from the posterior to the anterior part of the pelvis, are so gradual and regular, that, so far from arresting they tend to facilitate, in the greatest possible degree, this rotation. We maintain, therefore, that in the presentations of the posterior fontanelle, there is no tendency to arrest in the transverse positions; that these positions, therefore, are not, on this account, abnormal. It is almost universally the case, that as labour advances, rotation of the occiput anteriorly will occur: of course, with more delay than in an original first or second position; but with more readiness than in an original third or fourth. Hence, we have always dissented from those French authorities, who have considered transverse positions as peculiar: they are practically first or second positions.

We take it for granted, while making these criticisms, that Dr. Davis was speaking of favourable presentations of the cranium, and that the word "abnormal" applied not to a malpresentation, but to a malposition of the head. We make this observation, because he describes the position as transverse with the face "directed to the left or right ilium," which, in strict language, would intimate that the occipital protuberance was upon one side, the forehead upon the opposite, and the anterior fontanelle towards the centre of the pelvis. This would indicate a presentation of the sinciput, not of the occiput, involving the occipito-frontal or long diameter of the cranium, instead of the cervico-bregmatic or short diameter. This presentation we certainly think is "extremely rarely original," and truly abnormal, and may be followed by an arrest of the head.

As this work of Dr. Davis is devoted chiefly to difficult labour, instrumental deliveries occupy much attention. It is still a subject of much interest, and one of great practical difficulty to determine the relative value of different modes of instrumental assistance. There must, indeed, always exist cases where craniotomy, for example, is indispensable; but, nevertheless, statistical observations show that, in a very large number of cases, the decision as to the mode or manner of delivery depends on the practitioner: whether by version, the forceps, or craniotomy.

It is to England that the world is indebted for the forceps, an instrument most simple and most invaluable. The blessings it has conferred on humanity have not been, and are not even yet, fully developed; the proper

appreciation of their worth has been of slow growth, and, strange to say, slower in Britain than in any other civilized country. Thus, while Collins in Dublin reports one case of forceps in every 617 labours, Simpson in Edinburgh has one in 472, and Ramsbotham of London one in 611; in France, Madame La Chapelle gives one in 293, Madame Boivin one in 214; in Germany, Boer of Vienna one in 274, Naëgele one in 31, Klugé of Berlin one in 16, Carns of Dresden one in 14, and Siebold of Berlin one in 7.

Of course, it is not to be inferred from the above statements that the German obstetricians were always judicious in their resort to the forceps, or that the English practitioners should be too severely criticized for the comparative neglect of this powerful agent. Nevertheless, we, in America, have become so enamoured of the benefits conferred by this instrument and can discern so few objections to its frequent employment, that we do wonder at the caution and timidity of the English practitioner, and at the numerous restrictions placed upon the use of the forceps. Several valuable articles have appeared of late in the Dublin and London journals, exhorting to a more frequent recourse to this instrument, and especially to the necessity of its early employment in difficult labour, at least before the child's life or the mother's tissues are endangered by the delay or arrest of the head. Dr. Davis details from his private practice and consultations a number of very interesting forceps deliveries, which would indicate his partiality for the instrument, and his opinion that a large number of infants would be saved by a more timely resort to its aid. Nevertheless, in his statistics respecting the number of forceps deliveries under his superintendence, in the Royal Maternity Charity, we find that they were applied only fifteen times in 13,783 deliveries, being one in about 919 cases. In the Middlesex Hospital, during a space of two years (March, 1863, to March, 1865), there were 1400 deliveries, and the forceps applied fourteen times, being one in 100; while he gives 40 cases from his private practice of their application.

A strong argument in favour of this mode of delivery is, that in those countries where the forceps are more frequently used, craniotomy cases are proportionately diminished: thus, while Collins in Dublin had one forceps in 617 cases, he reports one craniotomy in 141 cases; while Siebold in Berlin had one forceps in every *seventh* case, and only one craniotomy in 2093! Although it would be wrong to make any positive deduction from such statistics, yet the conclusion is unavoidable, that the more frequent use of the forceps would tend to the preservation of fœtal and maternal life, and certainly would save a vast amount of human suffering. In the practice of Dr. Davis, we find, so far as regards the Royal Maternity Charity, intrusted to his superintendence, the number of craniotomy cases did not exceed those of the forceps, being fifteen in 13,783 deliveries, *i. e.*, one in about 919 cases. This result might, at first sight, be attributed to the use of the forceps; but a large proportion of the diminution of craniotomy cases is doubtless owing to the resort to premature labour in cases of deformed pelvis.

It is also to our British brethren that we are indebted for this "valuable addition to obstetric science, viz: the Induction of Premature Labour." They have boldly and successfully triumphed over all the prejudices, and all the arguments, which were opposed to its introduction. Many lives have been preserved through its instrumentality, and it is now one of the established operations of scientific midwifery. Dr. Davis himself details

numerous interesting cases of its employment with great safety to the mother, and very frequently preserving the life of the child.

Respecting the forceps, and the circumstances under which they may be employed, Dr. Davis's directions are mainly very judicious, although it is evident he would restrict their employment much more than would be done in this country or on the continent of Europe. He intimates, for example, that the forceps should not be applied so long as the head advances, however slowly, provided there be no evidences of exhaustion or impaction. Certainly, if the os uteri be dilated, and it is evident that labour advances very slowly in proportion to the severity of the pains, early assistance by the forceps will not only prevent much suffering, but tends to obviate the danger of impaction and inflammation. Again, he says that the forceps, in his opinion, are not to be employed if a full-grown child be present, unless there be at least 3¼ inches in the conjugate diameter. The general advice upon this subject, and the one which we have followed, is to trust to the forceps when there are 3 inches only in the antero-posterior diameter. Again, he says that a labour in which the ear cannot be reached, and where the finger of the practitioner "cannot be passed between the head and the pelvic wall at any point, is obviously one in which we could not have recourse to the forceps." To follow out this direction would limit exceedingly the use of the forceps, while there are numerous cases, especially where the head is at the superior strait, that the ear cannot be reached, and yet where the forceps may be readily and successfully employed, the diagnosis having been accurately established by examining the fontanelles and sutures. Certainly, also, the thin blades of the forceps can be safely insinuated between the cranium of the child and the vagina, where the finger of the practitioner could not penetrate. We object also to the following restriction, that "we should feel satisfied that there is risk to either the mother or child from a longer protracted pressure." Of course, on this point there can be no hesitation, but in many instances why should we wait until there be danger to either party? Why not operate as soon as it is evident that nature is not fully adequate to her work from a deficiency of power, or from too great resistance, suitable preparatory treatment having been instituted? Why not operate, other circumstances being favourable, to relieve the patient of the anxieties and sufferings of a protracted labour; to dispel the fears of a nervous or semi-delirious mother; and also, even in those cases of easy but slow labour, where the ergot might be beneficial, but where the forceps are a more certain, speedy, and safe mode of relief; and, finally, when there is evidently a difficult labour from a disproportion between the head and the pelvis, why not apply the forceps early, as soon as the os uteri is fully dilated, that traction may be made moderately during the bearing-down efforts, and thus have the advantage of additional power to overcome the resistance, and shortening the time during which the life of the child and the mother's tissues are endangered from pressure? Our experience is that the life of the infant and the welfare of the mother will be less exposed under this practice than when time is given to what is termed the "moulding of the head" to the pelvic passages.

It is true, however, that to accomplish all these desirable objects the forceps should be of a suitable form, size, and power. Dr. Davis gives a short account of the history of the forceps, their construction, &c. He alludes frequently to Dr. Denman's short forceps, but especially to his own improvement of Smellie's long forceps. As no drawings are given, we cannot judge of their especial advantages. In speaking of their "construc-

tion," he says that the "width between the opposite blades and of the fenestræ should be sufficient to guard against dangerous compression of the child's tender brain." It is not stated what space should exist between the blades when the handles are in contact; and as heads are of various dimensions, it would be impossible to construct a pair of forceps of a given width where the internal surfaces of the blades would come into close contact with the head, and yet no compression be made upon the cranium. Three and a half inches, for example, is the average measure of the biparietal diameter; and if this space be allowed, then injurious compression would be made, according to this theory, upon the head measuring three and three-quarters or four inches in this transverse direction; while a head measuring but three inches transversely could not be held firmly, and all attempts at traction would be dangerous.

Moreover, the forceps are generally applied where there is too much resistance; hence, either by nature or art there must be some compression, greater or less, before it can be delivered. If, therefore, the forceps be too wide, they would be of no value; indeed, in some cases of contraction of the pelvis, it might be doubtful whether the forceps themselves, if very wide, could be extracted from the pelvis without being previously unlocked. We have a specimen of a forceps in our Obstetric Museum thus *prudently* constructed, which measures little short of four inches in width when the handles are in contact. The truth is, that the forceps ought to be constructed of such a width as to make any compression upon the head which the obstetrician would deem advisable; his judgment, skill, and science are to determine the degree of compression which cannot be regulated by the form of the instrument. The practitioner who cannot regulate the power he employs, but must be restrained by the character of his instrument, should not be intrusted with a case of operative delivery.

In describing a "good instrument," it ought to have been clearly stated by Dr. Davis that the blades when once applied to the head should occupy no space, *i. e.*, the fenestræ should be so wide as to allow of the projection of the most salient points, especially of the parietal protuberances on the sides of the head. These comparatively large fenestræ constitute a great recommendation of the forceps of Haighton, Dr. David D. Davis, and of those which we have recommended; while the narrow fenestræ of most of the English, and all of the French and German forceps, detracts exceedingly from the value of the instrument, as always endangering the tissues of the scalp and those of the pelvis, and also augmenting the necessary compression on the head of the infant before delivery can be effected.

The addition of parallel "shanks" between the proper blades and the lock, as proposed by Dr. D. Davis, is, in every respect, a great improvement. We are not disposed at present to enter into a discussion whether the short handles of the English, or the long handles of the French forceps are preferable, but may notice it hereafter. We are decidedly in favour of the long handles, inasmuch as it increases the power of the instrument, as levers, and therefore enables the practitioner to accomplish, with a trifling exertion, a delivery which would demand a strong, muscular arm when the short handles are employed. Perhaps the failure of effecting delivery in many cases recorded by Dr. J. Hall Davis, might have been owing to this very circumstance; at any rate, it seems to us strange why that, in many instances recorded, delivery was not completed with the forceps; for when the hold on the head was secure, and the case suitable for this instrument, we can perceive no reason for their removal, especially upon the supposition

that the child was living. It is manifest that the forceps alone presented any hope for the child; therefore it would have been much better by cautious perseverance, using the instrument not merely as tractors but also as levers and compressors, to have made an effort for its safety. It is not probable even that, if the instrument were a good one, the tissues of the mother would be in any greater danger, as the forceps would occupy no space in the transverse direction of the head, and any compression of the cranium diminished *pro rata* the pressure on the vagina, &c. If the child were dead perforation should be at once resorted to.

Dr. Davis, as we have already seen, is decidedly in favour of causing rotation of the head by means of the forceps in all cases of arrest in transverse positions, and also in the left or right fronto-cotyloid (right occipito-posterior and left occipito-posterior) position. We have already animadverted upon this practice as increasing the danger to the tissues of the mother and child, and greatly augmenting the difficulty of operating. Our experience for years has been so universally successful in the use of the vectis to effect rotation, with little delay and without the least danger to the maternal or fœtal tissues, excepting of course in some cases of locked head, that we must believe *that these are not cases for the forceps.* Dr. Davis is conscious of the difficulty, and condemns therefore in these positions the ordinary forceps, and even those of Dr. Denman, to which many of his fellow practitioners are partial. He recommends, therefore, for the purpose of rotation the "oblique forceps," so-called, as the blades are to be applied obliquely to the head; one blade, which is the long one, over the fronto-lateral portion of the cranium and face; and the other, or short one, over the occipito-lateral. No drawings are given of this instrument, but we presume it is the same as depicted in Dr. David D. Davis's "Operative Midwifery." For practical purposes, two of these instruments must be at command, as the short blade must be sometimes applied on the left and sometimes on the right side of the pelvis according to the position of the head. We can perceive no necessity for this multiplication of the blades of the forceps, or for the necessity of having more than one *good instrument;* at any rate, it is all that we have found necessary even when the head is locked by the bi-parietal diameter, and where the blades should be applied obliquely over the fronto-lateral and occipito-lateral portions of the head; no injury having been sustained by the scalp or tissues of the neck by a long blade over the lateral occipital region. As we have no experience in the use of the forceps with unequal blades, it might be considered rather presumptuous to suggest that there is more danger of their slipping, than if the blades were of equal length; at any rate, this accident is described as having occurred in the hands of Dr. Davis in Case LX. We entirely agree with Dr. Davis that the blades of the instrument should never be applied directly towards the pubis or sacrum; and very seldom, if ever, directly over the face and occiput; but if this last-mentioned operation should unfortunately be essential, we see no necessity for a special instrument for the purpose; for if one blade of the long forceps be directly applied over the occipital region, and the other over the frontis, there is little danger, with common prudence, of injuring the features of the infant; for the very moment that the handles are grasped, flexion of the head is induced to such a degree that the pressure of the frontal blade is expended upon the os frontis, and not upon the face.

On the "Application of the Forceps" Dr. Davis's directions are, upon the whole, very judicious; certainly, they may be called prudent. There

are several points, however, to which we in America would express a decided dissent. Maintaining the position upon the side seems to us very awkward for the patient and practitioner, especially as not allowing the accoucheur to judge accurately of the relative position of the head, or of the changes which ensue during the progress of descent. Moreover, the position upon the side gives some lateral obliquity to the uterus, and, of course, to the child, and does not allow the practitioner to examine accurately the size or position of the uterus during the delivery. The patient also is far less at the command of the operator. This is often so true that Dr. Davis himself resorts to chloroform to obviate her restlessness. Occasionally, in some nervous and excitable patients, the moderate administration of anæsthetics may be admissible; but in forceps cases, as a general rule, anæsthesia ought not to be employed. We are of the opinion that the patient should be at the command of her accoucheur; she should advertise him of her sensations, and she should resist or encourage the bearing down effort according to his directions. We also maintain that a forceps operation with a good instrument, and in experienced hands, ought not to augment the sufferings of the patient. Hence, there is no necessity for ether or chloroform, unless there be some other complication than the necessity of resorting to the forceps.

In giving directions as to the application of the blades, by Dr. D., we think that there are several important defects and omissions. He supposes a case of the first or second position "*where the head is at or near the outlet.*" This implies that the head has nearly or quite completed its rotatory movement; therefore, that the occiput is at the vulva: but no allusion is made to the application of the forceps, in these first and second positions, when the head is still oblique in the cavity of the pelvis. This is a very important omission, for, according to our experience, it is often the most difficult case of delivery by the forceps, and in all instances demands some special attentions to the right adjustment of the blades. The character of these attentions is well portrayed by Dewees, Barrelocque, Velpeau, &c.; but from this omission of Dr. D., and from the language he employs, when speaking of his forceps operations, it appears that he has adopted the German rule of applying the forceps to the sides of the pelvis in all these cases, irrespective of the direct or oblique positions of the head: a rule certainly, we think, by no means accurate or scientific.

As to the "locking of the blades," Dr. D.'s caution to avoid force, &c., is all important; nevertheless, his experience and our own are, in many points, very diverse, *e. g.*, when there is a difficulty of locking the forceps, he advises that a short straight blade be substituted for the one which could not be adjusted. Hence he employs a short blade, which may act as a counterpart to either blade of his ordinary instrument. No doubt such an arrangement may often be successful; but it necessarily renders the instrument more liable to slip, and must diminish its effective power. With a good instrument where the blades are not too wide, the locking can universally be effected. Dr. D. goes still further, and advises that if this latter mode with the short blade does not answer, the instrument should be withdrawn, "and delivery be accomplished by other means." What other means? Does the Dr. intend the perforator, because the forceps cannot be easily adjusted and the child is living, and nothing wanted for its preservation except the easy locking of the forceps?

Dr. Davis gives very proper cautions as to the mode of acting with the instrument, only during the pains, of intermitting the pressure, and of

making traction effort slowly and carefully, &c.; but he gives no particular allusion to the use of the forceps as levers, which the accoucheurs in France and America deem a most efficient power, equally advantageous to both mother and child when judiciously exercised. Each blade is to be regarded as a single lever, the fulcrum at the joint. The forceps, therefore, is a double lever; and a lateral motion from one handle to the other made slowly, while traction is, at the same time, continued, is exceedingly efficacious in causing the descent of the head with little muscular effort. This pendulum-like motion is, in all cases, to be limited, especially when the head is high in the pelvis; and when judiciously exercised, is less dangerous to the tissues of the mother and child, than pure or simple traction. The long handles of the French forceps, by increasing the leverage, have therefore decided advantage over the short handles of the English and German forceps.

Again, Dr. Davis advises almost universally that the blades should be removed when the head is brought to the perineum, under the idea, it seems, that this tissue will be more liable to rupture if the forceps remain applied. This reason may possibly be correct where the forceps have small fenestræ, or where they are too broad, too large, &c., or where the head is rapidly and forcibly extracted from the vulva: but our experience is that with a good pair of forceps in the hands of an accoucheur, who is cautious and not too hasty, the perineum and all the tissues of the outlet will be as safe if the forceps remain applied, as when removed. We thus avoid also the dangers incident to the scalp of the child when the blades are removed while the head is subjected to the greatest possible pressure at the outlet of the body. It may be remarked, also, that, in many instances, especially of powerless labour, the woman could not accomplish delivery, even when the head is on the perineum, and the forceps therefore would have to be reapplied under very unfavourable circumstances. It is also a great disappointment for the patient, who has been told that her delivery would be accomplished by the instruments, to find that these agents have been removed, and yet the child is not born, and she must suffer on for a longer or shorter period.

As regards the 3d and 4th positions of Naëgele, Dr. Davis well advises that the natural predisposition of the occiput to rotate forwards and the face backwards, should be assisted. We are surprised, however, to observe the following direction that if the face be "already moved somewhat forward to the pubes, we should promote the rotation of the face forwards to the pubic arch." This we think bad practice, for modern experience proves that, in such cases, it is safe to have the anterior rotation of the occiput, and that it can be gradually effected by artificial measures. On the contrary, if the occiput rotates backwards, the patient is exposed to all the protracted suffering and dangers incident to the passage of the occiput over the posterior part of the pelvis, while the child at the same time has its life jeopardized, if at term, and especially in primiparous women.

Respecting the means of facilitating the posterior rotation of the face, Dr. Davis seems disposed to leave the process almost entirely to nature, except in cases of decided arrest of the spiral motion, and then he trusts the case exclusively to the "oblique forceps." We have great confidence in the powers of nature, and in the theory that the occipito-posterior positions will, in a very large proportion of cases, be spontaneously converted into occipito-anterior positions. We nevertheless maintain that the further the occiput is removed from the pubis, the more delay and difficulty, *cæteris*

paribus, will be experienced in this process. The labour, therefore, is difficult and tedious, and with great increased suffering and danger to the mother, and even to the infant. It may be also that the rotation does not occur, the head is arrested in the oblique position, or, what is always unfavourable, the occiput rotates to the hollow of the sacrum. We feel very confident in the truth of these assertions, although very much in opposition to modern notions, especially to those of M. Naëgele, who regards such positions not only as exceedingly common, but almost, if not altogether, as favourable as anterior positions of the occiput.

Acting upon the above views, we never leave an occipito-posterior position (or fronto-cotyloid) simply to the natural efforts, and we have the satisfaction, therefore, of declaring that in no case in our practice, which has lasted more than forty years, have we failed, when the attempt has been made, of effecting an anterior rotation of the occiput, in these third and fourth positions. As soon, therefore, as the os uteri is dilated and the forcing pains have commenced, one or two fingers, according to the direction of Baudelocque, should be applied to the pubic side of the os frontis so as to determine it backwards during a pain, and thus facilitate, at each returning bearing-down effort, the natural disposition of the os frontis to recede from the anterior to the posterior part of the pelvis. In a large proportion of cases, this is all that is demanded, but where delays or difficulties occur, the vectis should be introduced over the sacral side of the occiput, so as to determine it anteriorly along the inclined plane of the pelvis towards the vulva. This simple instrument has, in our hands, been completely successful; it gives no pain or irritation to the mother, who is not conscious of its presence, and not the least injury need be inflicted on the tissues of the mother, or on the scalp of the child. The vectis, we should think, ought for this purpose entirely to supersede the forceps, whether straight or curved, with equal or unequal blades: all of which are difficult of application, more or less dangerous to the tissues, and, judging from Dr. Davis's reports, not unfrequently unsuccessful. He speaks of the necessity of removing the forceps in some instances, and in others, of the slipping of the blades. We know that our opinions and practice are very much in opposition to those of many obstetric authors; and yet our experience as well as our theories fully confirm their correctness. Amid the multiplicity and acrimony of the debates respecting the relative advantages of the forceps and vectis, it seems surprising that the latter instrument, formerly supposed to be so superior, should have fallen into such disuse, and that its real value has not been accurately explained. Far inferior to the forceps as to power in causing the descent and delivery of the head, yet there are numerous instances in which this single bladed instrument should be preferred as more simple, more efficient, and less dangerous than the forceps: it is particularly adapted to cases where flexion and rotation are deficient.

Similar remarks may be made respecting all the "*transverse positions*" of the vertex. In our experience they are as easily managed, in most instances, as original first or second positions. If, however, there be any delay, the process of rotation should be, and can be, facilitated with as much and even with more ease than in original third and fourth positions, inasmuch as the occiput has to describe only two-eighths of a circle, during the process of rotation forward, instead of three-eighths of a circle, as it must do in third and fourth positions. Why, therefore, Dr. Davis should regard these transverse positions as abnormal, why he should speak of

them as an arrest of the process of rotation of the head from a fronto-cotyloid position, and why he should be called upon so frequently to apply his oblique forceps, it is difficult to understand. The head can very universally be determined, from this transverse position, by means of the fingers directed to the os frontis, or, if needs be, by means of the vectis directed to the os occipitis so as to insure its obliquity, as in the first or second position of the vertex. Theoretically and practically, therefore, transverse positions belong to the first and second positions of the vertex. We therefore never could perceive any good reason for speaking of eight positions of the vertex, as is done by various French authorities; or, if four grand positions of the cranium be assumed, as is done by M. Cazeaux, there should be any subdivision into the left or right occipito-iliac positions.

As to the application of the "long forceps" at the superior strait, or brim of the pelvis, Dr. Davis entertains, in common with most British practitioners, a dread of this valuable agent. He says "it may with truth be observed that, as a rule, when the head is arrested at the upper strait, the difficulty is of that degree to be overcome only by the safer operation of craniotomy." If the child be already dead, this rule of Dr. Davis is very good; but, if the child be living, we can perceive no humanity and no science in thus sacrificing the life of a human being, without resorting to the forceps, or, if these be not at hand, to what we deem a less safe operation, podalic version. Dr. Davis, however, specifies certain cases where there was no resistance from the soft parts, where the pains were strong, the child living, and where there was room for the forceps, which would justify "a cautious trial of the long forceps."

We acknowledge that we have no such dread of the "long forceps" at the superior strait, if they be properly constructed, and in the hands of a well-educated and experienced practitioner. There is no intrinsic difficulty in their application or in their locking, and, if judgment and prudence be exercised, and traction be made in the direction of the "obstetric axis," there is no special danger, either to the tissues of the parent or to those of the infant. If, therefore, there be three or more inches in the antero-posterior diameter of the superior strait, and the head of the child be of ordinary size, and the os uteri fully dilated, we think the forceps should be applied early, that is, soon after the bearing down efforts have commenced. To wait hours for the elongation and moulding of the head, for tumefaction of the scalp, or for the congestion or inflammation of the tissues of the mother, or until the practitioner be alarmed at the prospect of rupture of the uterus, of convulsions, fever, or exhaustion, &c., cannot be justified. If there be a necessity for the forceps, it should be determined as soon as possible, and the operation be performed, while the mother and infant are in good condition: the prospect of success would be then great for both mother and child; protracted sufferings and many dangers would be prevented, and in a large number of cases the fearful alternative of craniotomy may be avoided. We also are of the number of those who believe that the forceps operation at the brim of the pelvis is greatly to be preferred to podalic version in cases of "arrest," even when there is some disproportion between the head and the pelvis, notwithstanding the zealous and learned argument of Professor Simpson in favour of version.

Dr. Davis makes a few observations on transverse and oblique positions of the head when arrested at the superior strait, recommending the use of his oblique forceps, in these cases, in the same manner as when the head was lower in the cavity of the pelvis. He, very wisely, objects to the pas-

sage of the blades towards the bladder and rectum in these transverse positions at the superior strait, and thinks that it is very seldom necessary to apply them over the occiput and face of the child, but advises one blade over the pubic side of the os frontis, and the other on the sacral side of the occiput. In this we heartily concur, as there is almost always room towards the acetabulum and sacro-iliac symphysis for the passage of the blades, as the pressure in this oblique direction over the head of the child does not augment the bi-parietal diameter, and as the action of the instrument upon the side of the os frontis and the side of the occiput necessarily facilitates rotation of the head, so desirable under these circumstances. We have always practised and recommended this mode of application when the head has been "locked" between the pubis and sacrum.

In the summary given by Dr. Davis respecting the employment of the forceps, he exhorts to great care in determining the proper case for their use, and the time or circumstances in which they should be applied. Believing that, in all cases, "some risk is inseparable from (their) use," he wishes to guard the young practitioner from a too early resort to the instrument, asserting that so long as the head advances and recedes, during and after a pain, that the tissues of the mother are safe; but, if the child does not advance under powerful pains at the expiration of five or six hours, then the operation should be resorted to. If, however, well directed extractive power be exerted, and the head does not advance, the forceps should be removed, and other measures (craniotomy?) be adopted. There can be no doubt that all this is very prudent, and occasionally very commendable; but we must acknowledge that we are not of the opinion that there is any "risk" inseparably connected with the use of the forceps; and believe that an earlier application, before any great tumefaction of the scalp, or swelling or inflammation of the mother's tissues, would be more desirable, not only for the sake of the mother, but for the preservation of the infant. We can perceive no advantage either to mother or child from allowing the labour to be tedious, and inefficient for hours, when a little assistance with the forceps would accomplish far more, with safety to the tissues of the parent and the life of the child. Neither do we approve, as we have already mentioned, of the direction to remove the forceps, if the head does not advance after a few efforts, especially as craniotomy is the necessary result: it is much better to run the risk of compressing the head to a certain extent, that delivery may be accomplished under the hope that the child may even yet survive, than to make its death certain by the perforator. Moreover, we have advised[1] that, if the forceps cannot accomplish the delivery, the head should be perforated without removing the instrument; after which any required degree of compression may be made to effect delivery: the forceps will thus diminish the size of the head, and proportionally lessen the pressure on the pelvic tissues, while, at the same time, there is no danger of their slipping, and they constitute the safest and the most powerful of our extractive instruments.[2]

With the vectis or lever, Dr. Davis has very little experience; he dreads its employment as a lever, for fear that the mother's tissues would be made a fulcrum, and thereby injured. He regards it, therefore, as a simple tractor, and, of course, as far inferior in this point of view to the

[1] *Vide* Principles and Practice of Obstetrics, by H. L. Hodge, M. D.

[2] In one instance, Case CXXVII., we are happy to find that Dr. Davis himself adopted this practice, using his "modernized Smellie's forceps" to compress the head after the bones had been broken to pieces by the bone forceps.

forceps. He intimates that it might be occasionally used to promote rotation in some moderate cases, as a tractor, where there is no deformity of the pelvis, and in some instances of brow and face presentations. He makes no allusion to its great value in producing flexion, where the chin has departed too early from the breast, and, as we have already frequently intimated, greatly undervalues its power and its comparative safety in effecting rotation of the head. We see no objections also to its being employed simultaneously both as a lever and tractor, believing that the practitioner's fingers can perform the duty of a fulcrum, without any injurious pressure upon the tissues of the mother. Its use, therefore, should be more frequent.

Before the introduction of the forceps, obstetricians had, in cases of obstructed labour, no other alternatives than craniotomy or podalic version: this last, therefore, was employed in all cases where there was the least hope of preserving the infant. Since Messrs. Smellie and Levret perfected the forceps, version has been very generally abandoned, until 1847, when Dr. (now Sir) James Y. Simpson, in an erudite and ingenious lecture, recalled the attention of the profession to version as a substitute for craniotomy, confirming his views by skilful reasoning and citation of cases. Most practitioners in Great Britain, and many on the Continent, have partially or entirely embraced his views, among others our author. If the question be simply, as it was with our ancestors, between the two operations, craniotomy and version, they and Dr. Simpson are to be justified. Upon that point there can be no dispute: but the question now to be decided is, whether the long forceps or version be preferable, where there is moderate contraction at the brim, and the child still living. Dr. Davis has operated by version in a few cases, where, he says, the long forceps had failed, with safety to the mother, and in one or two instances where the child survived. The subject is important, but we cannot now enter into its discussion; we have delivered our sentiments elsewhere.[1] We may, nevertheless, observe that neither the reason nor the facts adduced by Professor Simpson have satisfied our mind as to the comparative safety or efficiency of version. We do confess that we have always regarded version, especially in contracted pelvis, as more painful and dangerous to the mother than the use of properly constructed forceps in the hands of a skilful and educated practitioner. Statistics seem to confirm this idea, as, according to the tables of Dr. Churchill, one mother perishes in every fourteen cases of version, and but one in thirty-two after the operation by the forceps. As regards the safety of the child, the same tables show that the death of infants is one in every three cases by version, and one in $5\frac{3}{4}$ or 6 cases by forceps operations. These, of course, embrace all reported cases, without reference to the peculiar complication of labour, but they may be regarded as indicating the respective danger of the two operations to mother and child.

In contracted pelvis, we can perceive no reason why, with equal force applied, the head cannot descend presenting the vertex as readily as when the base of the cranium descends first. We do know that this is the ordinary mode of delivery, in the proportion of at least ninety cases in a hundred; that the head can, when the vertex presents, be moulded and compressed by the bearing-down efforts of the mother against the pelvic openings, notwithstanding all the ingenious argumentation of Professor

[1] *Vide* Principles and Practice of Obstetrics, by H. L. Hodge, M. D.

Simpson as to the flattening of the arch of the cranium and the increase of the bi-parietal diameter; and our own experience tells us that, by means of the forceps, children can, not unfrequently, be delivered alive through a contracted brim. It is well known also that the life of the child is far more safe in cases of delay in vertex presentations, where the functions of the cord and placenta are comparatively little disturbed, than in pelvic deliveries, where the intra-uterine circulation of the child ceases as soon as the head reaches the os uteri. The only apparent advantage which can be claimed for version is the great force which can be rapidly applied through the medium of the body and neck of the child, to effect the passage of the head. But this very force is dangerous, often causing injuries to the tissues of the neck, including its bloodvessels and occasionally even the spinal marrow, and often also causing effusion upon the brain, compression of this organ from the indentation or even fracture of the bones of the cranium. That children have survived some of these accidents is no argument against the manifest and great danger incurred, which combine compression upon the cord, and the separation of the placenta, and augment almost indefinitely the risks of version in contracted pelvis. Hence MM. Capuron and Cazeaux state that in all "difficult cases" two-thirds or three-fourths of the children perish.

The repeated failure of the forceps in contracted pelvis in the hands of Dr. Davis and other British practitioners is not easily explained; perhaps it may be owing to the imperfect character of the instruments employed, the want of sufficient leverage dependent upon the short handles of their forceps, or, it may be, from their dread of this "high operation," which may induce them to postpone it too long, or to abandon it too readily after it has been undertaken.

The "*induction of premature labour*," in cases of contracted pelvis, so as to prevent a resort to craniotomy or Cæsarean section, is of the utmost value; the whole world is indebted to Dr. Macaulay and other British obstetricians for the suggestion and establishing of this operation. It was long resisted upon the Continent of Europe, but France and Germany are now among its strong advocates. No one now objects to it, on moral or religious grounds; it is sanctioned by the Church as well as by the profession. Dr. Davis gives many interesting examples of its indispensable value.

The fear now is, that it will be, if it has not already been, abused; it is an operation so readily performed, with such little risk to the mother, that patients and practitioners are tempted, too often on trivial grounds, to excite labour for the benefit or even the caprices of the mother, forgetting their responsibility for the life of the helpless, unconscious fœtus. It is not amiss to reiterate, to the profession, the command, "Thou shalt not kill," and to remind obstetricians that the responsibility of intra-uterine fœtal life rests almost exclusively upon them.

Of course it is impossible to specify the peculiar cases in which the induction of labour is justifiable; it certainly, however, shocks our "moral sense" to hear of one fœtus after another of the same mother being destroyed designedly, not positively to preserve the life of the parent, but merely that she should be saved from the danger of the Cæsarean section—a danger which modern science has greatly diminished. Judging also from our own observations, we cannot sanction the practice of inducing premature labour for the persistent vomiting of pregnancy; it may be possible that one woman in ten thousand may perish from this cause, but let the

principle be sanctioned, doubtless hundreds, even thousands, of infants will be sacrificed because inexperienced practitioners will too readily despair of their patients, and especially because it is so common and even natural that women under the depressing melancholy, and despairing condition of mind and body generated by the nausea and sickness of pregnancy, will urgently importune for relief, even at the sacrifice of their unborn offspring: they think only of their own wretchedness, and are perfectly oblivious to all their moral responsibilities, either as regards themselves or their children. The friends and nearest relatives, anxious only for the mother, will demand any sacrifice for her welfare, or even immediate comfort: the responsibility of all such cases for the life or the fœtus must rest upon the practitioner alone. We have never seen a case in which the induction of labour would be justifiable, in consequence of the nausea of pregnancy, neither have we known a case, in our own circle of professional practice, or that of our medical friends, where death has resulted from this cause. Sickness of a severe character is often protracted for nine months of utero-gestation, with safety to the parent, while a full grown and well developed infant has rewarded the mother for her tedious sufferings and her mental anxieties.

So also as regards puerperal *convulsions*, there may be cases where the induction of labour may be demanded, but we have not yet seen one, neither can we perceive the necessity, or the philosophy of exciting labour during or after an attack of convulsions: we have always maintained that it is bad practice to superadd the pains and bearing-down efforts with all their attending circumstances, to those irritations which have already induced convulsions: it is adding fuel to the existing flame, especially as this is done when the nervous and vascular systems of the patient are in a disturbed, morbid condition.

Cases of "accidental" or "unavoidable" hemorrhage are often so urgent that labour must be induced for the sake of both parent and child. We are very doubtful whether it should ever be practised for organic diseases of the brain, heart, or lungs, all of which are necessarily fatal, sooner or later, to the mother, and whose progress will seldom be materially hastened by labour, conducted by an experienced and scientific practitioner. If, however, induction of labour should be advisable, it should always be postponed until the child is "viable."

Craniotomy Dr. Davis refers to as the final resource, in almost every instance, of the accoucheur. He seems to have very little faith in the Cæsarean section, stating that out of 77 cases, occurring during 126 years, in Britain, only 10 mothers had survived, and 43 children. Hence, he concludes that in all cases of deformed pelvis, craniotomy is demanded; except when the conjugate diameter is less than one inch and a half, and there be three and a half inches in the long diameter, when of course the Cæsarean section must be performed. Whatever confidence may be placed in the skill of Dr. Davis, or other British accoucheurs, imitating the practice of Mr. Osborn, we cannot be persuaded that craniotomy in the pelvis under two inches in the short diameter is as safe an operation as the Cæsarean section; and hence the range given by Dr. Davis from three inches to one and a half in the conjugate diameter for craniotomy is too great: it should be diminished to two inches, as has been done by most late writers.

As to the mode of operating, there is nothing novel in the practice of Dr. Davis; he is sensible, however, of the dangers of the simple crochet, and recommends the guarded one as proposed by Dr. David D. Davis. He, when the head is to be greatly reduced in size, as in some rare cases, em-

ploys also the osteotomist. He dismisses the cephalotribe of Baudelocque, *neveu*, as of no practical value.

We shall not rehearse all the difficulties and dangers of crochets, simple or guarded, nor recount their terrible and often fatal consequences, these are well known to the profession; but, there is a principle connected with their employment, which has been strangely disregarded: they, and all the variety of craniotomy forceps act simply as *tractors*, they have no direct influence in diminishing the size of the head. This diminution of the cranium, in crochet deliveries, is effected by the passages of the pelvis, through which the head is drawn, and of course at the risk of the tissues lining the cavity of the pelvis: hence, often, inflammation, gangrene, sloughing, &c.

Now, although it is impossible entirely to avoid this pressure, yet if a pair of strong forceps or "compressor cranii" be applied to the sides of the head after perforation is made, the whole vault of the cranium may be so diminished in size that the pressure upon the tissues of the pelvis will be comparatively trifling; the forceps, and not the canal of the pelvis, is the compressing power. Moreover, experience shows that there is no danger of even the scalp being wounded by the fractured bones of the cranium, they are all pressed inward; and also there is no danger, with a well-contrived instrument, of slipping; the more the head is diminished, the more completely and securely is it embraced by the blades of the instrument. Hence, if the deformity is not greater than two and a half inches in the short diameter, a common pair of long forceps may be sufficient; or, if there be a contraction to two inches, the "compressor cranii,"[1] or some other variety of cephalotribe, as recommended in France or Germany, will be efficient. If the deformity be less than two inches, the Cæsarean section is required for the safety of the mother.

Dr. Davis acknowledges that, in some cases, delivery cannot be effected by the crotchet; the vault of the cranium is broken up, and there is no point for fixing the instrument; he says occasionally the foramen magnum can be reached. We are surprised that less is said of passing the crotchet into the mouth of the fœtus, and fixing its point upon the palatine processes of the upper maxillary bone, which would give a good purchase in many cases. Dr. Davis has, in several instances, resorted to version in order to accomplish delivery where the crotchet had failed. Dr. Ramsbotham, and others, have also been forced to this alternative.

Respecting the cases which imperiously demand this terrible operation in which the child's life is sacrificed, and where the mother perishes upon an average once in 5 or 6, much difference of opinion must necessarily exist. The fact, however, already cited, that whereas in Germany craniotomy was performed but once in about 2,100 cases, and the forceps in every seventh case, while in Dublin craniotomy cases were 1 in 141, and the forceps 1 in 617, clearly indicates that there will be a proportional decrease in the operations with the perforator as those with the forceps become more numerous. There is a disposition with many of the British accoucheurs to enlarge the sphere of forceps operations. Dr. Davis, judging from his reports of private practice, is partial to this instrument, although in his reports from public institutions he gives but 15 in 13,783 deliveries, or 1 in about 919. We are happy to find, however, that his craniotomy operations are by no means so numerous as those of Dr. Collins, being but

[1] *Vide*, Principles of Obstetrics, by Dr. Hodge.

1 in 919. This reduction was probably owing mainly to the resort to premature labour so valuable as a preventive to craniotomy. After an examination, however, of the cases of embryotomy given by Dr. Davis, we must acknowledge our belief that many of them might have had a better result under different treatment. We make this declaration with great diffidence, as it is impossible to form accurate opinions of the true nature of the case from the short description of the circumstances. It is to be observed, also, that many of the instances detailed had been much neglected in the early stages, the patient having been for many hours, and sometimes days, in labour, before proper assistance was obtained; the necessities of the mother, and often the death of the infant requiring immediate resort to the perforator. Still, however, we may ask why in Cases LXXXIX., XCIII., and CXVIII., where the forceps had been applied to the head, delivery could not be effected? We see no satisfactory answer to this question, in the declaration that the head was somewhat larger or more ossified than usual, or it was thought imprudent to persevere with the forceps when the head did not advance. A good instrument with long handles is really so efficient that a head of ordinary size, when well ossified, can certainly be extracted through the straits of the pelvis when no deformity exists. Experienced accoucheurs limit, therefore, a forceps operation to three inches in the conjugate diameter, declaring that a living child may be born even under this degree of contraction. We, ourselves, have delivered a child whose bi-parietal diameter measured three and seven-eighth inches, while the antero-posterior diameter of the superior strait was little, if any, above three inches. In some instances cited by Dr. Davis, the head had actually passed the superior strait, and was in the cavity of the pelvis; forceps were applied, found inefficient, and removed. Again, we must acknowledge our surprise to read that, in many examples, craniotomy was employed because there was no room for the forceps, as in Cases CXIV. and CXXVI. Perhaps we might imagine a case of this kind, but certainly it must be very rare, except in cases of great deformity, so great as to demand the Cæsarean section. When we speculate regarding the *space* for the introduction of the forceps, we must dismiss the idea of a large, formidable instrument to be pushed through the vulva, but think only of the thinness of each blade of the instrument, say about one-eighth of an inch, and examine whether there be not room enough in some part of the pelvis, to insinuate this thin lamina between the head of the child and the vagina, first upon one side and then upon the opposite, remembering that after the introduction of the blades, if they be properly constructed and adjusted, they may be said to occupy no space, inasmuch as the parietal protuberances, or other prominences of the cranium, and the tissues of the scalp will protrude through the fenestræ of the blades. If the head be "locked" it must be, as Baudelocque says, either in the direction of the bi-parietal diameter, or of the occipito-frontal, between the promontory of the sacrum and the pubis, leaving therefore always sufficient space towards the sides of the pelvis or towards the acetabulum and sacro-iliac symphysis for the introduction of the blades.

There may be doubtless cases also, rare we should imagine, where the swelling and turgescence of the pelvic tissues might render forceps operations unadvisable, and yet the child be still alive; but even in such cases, after a decided resort to all our measures for promoting relaxation and diminishing inflammatory turgescence, the forceps should be preferred at the risk of some injury to the soft parts of the mother, rather than to sacri-

fice the life of her infant. Even this alternative can seldom be prevented, as the child usually perishes before any such dangerous complications have occurred.

We regret that Dr. Davis has not specified more clearly what he means by "impaction," for he employs it several times when there is no deformity either in the head or pelvis, and therefore when the head is not strictly "locked" between the bones of the pubis and sacrum. Hence, "impaction" would seem to indicate simply "arrest" of the head, from deficiency of power or rigidity of the soft parts, or the mere swelling and congestion of the tissues of the scalp and those of the pelvis, all of which might have been partially or completely anticipated by relaxing measures, or by a timely resort to the forceps. It is certainly very injudicious, if the case can be seen in time, not to operate until the swelling, inflammation, fever, &c., have ensued, endangering the welfare of both mother and her child. Exceptions may exist no doubt, but they do not invalidate the rule. We would inquire, therefore, without presenting an answer to our question, whether any of the craniotomy operations detailed by Dr. Davis, might have been avoided by the application of these principles. The induction of premature labour has done much, and we hope that a more scientific employment of the long forceps, especially at the superior strait of the pelvis, will accomplish much more in lessening craniotomy operations, which have been so frequent, proportionally, in British practice.

In speaking of "face presentations," Dr. Davis regards them very justly as more dangerous than cranial, and less than pelvic presentations. The causes of the greater danger he attributes, in the first place, to "their occupying so completely the pelvic space;" and secondly, to the pressure upon the neck causing great congestion of the cerebral vessels. The first of these supposed causes is certainly not very obvious, inasmuch as the diameters of the face, and the anterior portion of the cranium are decidedly less than those of the posterior part of the head; and although the neck descends into the pelvis with the occipital region, when the face approximates the perineum, yet the mechanical disadvantage is not great, as the diameters of the superior part of the pelvis are sufficiently large for the accommodation of the occiput and neck, while the face and forehead can readily pass through the inferior outlet and the os vagina without any impediment from the neck. The second supposed cause of danger is more plausible, but at the same time cannot be much greater than in vertex presentations, for in both cases there is great congestion of all the vessels of the head when the labour is delayed. We would therefore attribute the danger of face presentations rather to their greater tediousness. This is owing to the uterine forces acting through the medium of the child's neck, and therefore in this case are not spent directly, but indirectly upon the head. Hence, power is lost, or rather wasted, and, of course, labour is more tedious, and the danger to the child greater. Dr. Davis gives us no details as to the mechanism of face presentations, dwelling chiefly upon the fact that in the posterior mental positions of the face, the chin very universally rotates towards the pubis. Dr. Davis met with one case at the Middlesex Hospital where the child, at full term, but decomposed, was delivered with the chin posteriorly; and his friend and colleague, Dr. Hicks, succeeded in delivering an infant (whether large or small is not mentioned) alive with the forceps, under the same circumstances.

Dr. Davis states that the first and second positions of the face are "analogues," or, as the French would express it, "deviated presentations" of

the first and second of the cranium. This is true, but it must create some confusion in the mind of the student to be immediately told that the chin rotates towards the pubis, precisely, and in the same manner as the occiput in vertex presentations, not, it is clear, as in those of the first and second to which attention was directed, but as in third and fourth. Thus, although the first position of the face is a deviation from that of the first position of the vertex, it is manifest that the mechanism of delivery is analogous to that of the third position.

It is to be regretted that the beautiful mechanism of labour, so minutely detailed by many of the modern writers since Madame Lachapelle, has not been more fully portrayed by Dr. Davis, as evincing the wonderful provision made for the safety of the infant, and justifying modern accoucheurs in trusting so much to the natural powers in cases of face presentations. We cannot, however, join with those who regard them as a mere variety of normal labours; the child is in more danger, because power is lost, thus causing delay, and because, in some instances, the rotation will occur of the chin posteriorly, and which, with the ordinary relative position of the head to the pelvis is very universally fatal to the infant, and very dangerous to the mother.

We cannot agree, therefore, with Dr. Davis in always leaving such cases to the natural processes, until the patient be exhausted or the head no longer advances. If the physician be called in time, after the os uteri has dilated, and when the face has not passed through this opening, we see no valid objection, especially if the patient be anæsthetized, to resort to "version by the vertex," that is, to introduce the hand and pass the fingers over the occiput, so as to produce flexion of the head, and the descent of the vertex. This is an operation, under the circumstances mentioned, easily effected, and delivers the mother and child from all the peculiar dangers incident to a face presentation. We cannot but think that the "version of the vertex" would have saved much suffering, difficulty, and danger if it had been adopted in Case XXXIX., reported by Dr. Davis. Dr. Davis was called to this case two days after labour commenced, and four hours after the arrest of the head; the os uteri was well dilated, no pyrexia, vagina soft, secreting mucus, head presenting, so that the "left brow and eye (were) behind the pubes; I could easily reach the adjacent side of the nose." An attempt was made to elevate the face by the index and middle finger against the os frontis: this failed. Three hours were allowed to elapse, trusting to nature. The bearing-down efforts were powerful, but causing no advance; there was protrusion of the scalp, and the patient was already much exhausted with her efforts. The oblique forceps were now resorted to, to alter the presentation; the blades were passed "along the sides of the pelvis, using for the occipito-lateral region the short blade;" they were easily locked, and, continues Dr. Davis, "made traction during each pain; at the same time I gave a rotary movement to the head, so as to raise the brow and depress the vertex." All this is rather enigmatical; it does not appear exactly to what parts of the head the blades were applied, as they were directed to the sides of the pelvis, but as the short blade was directed to the lateral occipital region (pubic or sacral side?), the long blade was applied to the opposite frontal region. Traction, under these circumstances of partial or complete extension of the head, would tend mechanically to bring down the forehead rather than the occiput, but by some peculiar but not very intelligible kind of rotary motion, Dr. Davis succeeded in bringing down the occiput, and of course elevating the face, adding in his "remarks"

that the "compressing power of the forceps contributed to this favourable change." The child was delivered with the occiput posteriorly and face to pubis, which, according to the usual language of Dr. Davis, indicated delivery as in the third position of the vertex, when the posterior rotation of the occiput ensues. The child was born asphyxiated, but recovered, and mother did well.

Dr. Davis deserves credit for his peculiar skill in managing the forceps, as is shown by the favourable result of the cases, but in our judgment, if version by the vertex had been resorted to at his first visit, he would have been saved great trouble and anxiety, the patient would have escaped three hours of agonizing pain, so great as to cause exhaustion, and risking inflammation of her tissues, while the tumefaction and protrusion of the scalp of the child, and the dangers of its asphyxiated condition, would have been obviated. There would have been no necessity for the manipulation with the forceps, or for the "rotary motions" given to the head of the child. It may be remarked, *en passant*, that it is not correct language to term this a "brow presentation," for it is stated expressly that the brow and left eye were "*behind*" the pubis. Of course the occipital protuberance was towards the sacrum, the anterior fontanelle towards the centre of the pelvis. Hence the occipito-frontal diameter corresponded to the oblique diameter of the pelvis; the presentation, therefore, was one of the sinciput or anterior fontanelle.

Nevertheless, it is comparatively very rare that the patient, in case of face deliveries, is seen early enough to resort to "version by the vertex." Hence the rule generally adopted is to leave the further delivery to nature's effort. This rule seldom requires any modification in the third and fourth positions of the face, *i. e.*, in the mento-anterior positions. We do maintain, however, that in the first and second positions (*i. e.*, mento-posterior) the natural efforts ought not to be entirely trusted, although there is usually a disposition for the chin to rotate anteriorly, yet this does not always occur; the head may be arrested, the child may perish, and craniotomy be demanded. There is also danger of the chin rotating posteriorly, which is still more frequently serious to the child, and even to the parent, for though we read of living children being born, as in the case of Dr. Hicks, by means of the forceps, &c., yet it can hardly occur unless the head be proportionally small. With a full development of the head a favourable delivery, chin posteriorly, ought not to be anticipated. If to these reasons we add the continual and protracted sufferings of the mother, the risk of inflammation, of fever, or of exhaustion, it is to our minds evident that as soon as the face descends through the superior strait, the practitioner should facilitate the rotation of the chin anteriorly by pressing on the pubic side of the cranium, with one or more fingers, so as to cause its rotation posteriorly, while the chin and tracheal portion of the neck are determined anteriorly, when delivery will ensue without any special resistance, the diameter of the head then corresponding favourably to those of the inferior strait and of the os vaginæ.

In this connection we would fix attention upon Case XXV. where the face presented in the right mento-iliac position, and the os uteri was dilated at 11 P. M. The head descended into the pelvis for two hours; and no advance was subsequently made for four hours, when Dr. Davis was called. The pains were weak, and considerable uterine congestion existed. Venesection was very efficacious in relieving this congestion, and delivery was effected in the course of one hour by the strong bearing-down efforts of the

mother; the child perished, and the mother did well. This case is interesting in showing the influence of the lancet in re-exciting the dormant powers of the uterus in cases of congestion, and also in confirming the idea that face presentations should not be left entirely to nature, for there is reason to believe that the child's life might have been preserved in this case, not only by an early resort to the lancet, but also by facilitating the rotatory motion of the head.

In Case XXVII. we have a favourable account of a natural labour, face presenting in the left mento-iliac position. Dr. D. was called at 9½ P. M., the os uteri not being then fully dilated. "Labour proceeded steadily through the night." Dr. D. was again summoned the following morning at half-past nine: no assistance was rendered, and the woman was soon delivered of a living child, both parties doing well. We must ask, whether many hours of suffering and danger, and the consequent anxieties would not have been spared to the parent, if pressure by the fingers had been made upon the left side of the head, so as to facilitate rotation of the chin to the pubis, a pressure which could have done no mischief either to mother or child.

Case XXVI. is very rare, and of course very interesting. The left brow, eye, and side of the nose were distinctly felt at the commencement of labour, but as the labour advanced, they receded and the occiput was found presenting. This spontaneous conversion of a brow or face presentation, or, as we should characterize it, an anterior fontanelle presentation into one of a vertex, is not, however, to be anticipated, but gives sanction to the practice we have recommended of imitating this process artificially, by resorting to "version by the vertex," when the head is high up.

In the statistics, Dr. D. states that out of 13,783 deliveries, there were 123 face presentations, being nearly one in 113: of these, 121 were delivered without assistance, one alive by the forceps, and one still-born by turning. Of the 123 children, 11 were still-born, being about 9 per cent.

Under the head of preternatural presentations, Dr. D. includes two varieties. 1st, Pelvic; 2d, Transverse. We prefer arranging pelvic deliveries under the head of Natural Labour, so as to indicate to the student the idea that assistance is seldom required. Dr. D. divides pelvic presentations into four positions, corresponding to those of the vertex. In the first, or first abdomino-posterior position (left sacro-anterior), Dr. D. describes the mechanism of labour with considerable accuracy, adopting, however, the idea of Naëgele that the hips descend not parallel but obliquely to the inferior strait; that in this first position the left hip is the lowest, and is really the presenting part, although, he says, the raphe of the buttocks corresponds nearly to the left oblique diameter. This view we think incorrect, for although the left hip is more readily felt, being nearer the vulva, yet as regards the brim of the pelvis, it is on a level with its fellow, and that the true presenting part of the pelvis of the child is the region of the coccyx, which is opposed to the central portion of the pelvis. Rotation of the hips ensues, the left approximating the pubic arch implying a twist in the loins, which Dr. D. does not expressly acknowledge, but virtually admits, as he says the shoulders do not rotate at the same time. The hips pass through the inferior strait and vulva, their long diameter parallel to the coccy-pubic, which Dr. D. believes is usually the case, in opposition to Naëgele, who contends here also for the obliquity of the hips. The shoulders follow the hips in rotation, and in having their long diameter corresponding to that of the inferior strait: the head passes the inferior strait obliquely as regards the

pelvis of the mother; and also we find Dr. Davis saying, obliquely as regards the occipito-frontal diameter, for after bearing-down efforts, the sub-occipital diameter corresponds to the right oblique of the brim, and eventually to the coccy-pubal of the inferior strait. Respecting the power by which the head of the child is forced down, Dr. D. is not sufficiently precise, but it is important for the student to remember that the uterine contractions have no influence after the head has descended into the pelvis, the head being actually out of the uterus; but the power depends entirely on the voluntary efforts of the mother. Neither can we believe that anything is gained by what Dr. D. terms "the elastic reaction of the vaginal walls." We never could discover any evidence of contraction in the distended or relaxed condition of the vagina, and although there is a "recoil" of the perineal tissues, owing partly to their elasticity, but especially to their muscularity, yet such recoil does not occur until after the transit of the parietal protuberances, when, of course, the head is virtually delivered. The only powers therefore, by which the head is expelled at the conclusion of pelvic deliveries depend on the muscular contractions of the parietes of the abdomen. The lateral course of the spine, during the transit of the hips, is also noticed by Dr. Davis.

In the abdomino-anterior positions, the mechanism of labour, as regards the hips and shoulders, is not materially different from that already stated; but the descent of the head, in a state of flexion, with the face and forehead towards the acetabulum is usually attended with rotation of the face backwards, and the occiput forwards, so as to bring it to the pubic arch, as in original sacro-anterior positions. Dr. D. seems to believe this is always the case, as he does not notice those instances where the occiput rotates towards he sacrum, and the os frontis under the pubis. He quotes Naëgele for a case which has been reported by other authorities, where in these sacro-posterior positions the chin, having departed from the breast, is hooked up behind the symphysis pubis. It being there arrested, the occiput is forced to descend along the posterior margin of the pelvis, and is delivered first.

As to the frequency of pelvic deliveries, including feet and knees, there were 243 in 13,783 deliveries, being nearly 1 in 57. The danger of pelvic deliveries is much greater than those of cranial or the face, owing, says Dr. D. and most authorities, to the pressure made upon the cord, but probably the chief danger arises from the fact that the placenta is usually detached by the contractions of the uterus, which expel the head from its cavity, therefore causing the suspension of the placental functions while the head is still in the pelvis.

In the management of breech labours the directions of Dr. Davis are very judicious, avoiding unnecessary interference with the progress of delivery, maintaining therefore the bag of waters unruptured as long as possible, avoiding traction efforts upon the body of the child, and encouraging the bearing-down efforts of the mother, so as to augment the flexion of the head.

Should assistance be demanded, he prefers the fillet to the blunt hook. Should the head be delayed by its extension, Dr. D. recommends the fingers of one hand to the chin, and those of the other to the occiput, to increase flexion. It is much better to place the fingers upon the upper jaw, or even, if possible, over the whole face of the child, rather than to the chin. There is one rule, however, very universally neglected by teachers, but which we regard as of immense importance, viz: to carry the body of the child forwards, so that its spine may be nearly at right angles to the body of the

pubis; *then* traction on the body of the child, made in this direction, will greatly assist the fingers on the face in causing flexion, as the occiput will impinge against the pubic arch. Many lives of infants may be saved, in difficult cases, by this manœuvre, even without the assistance of the forceps.

In abdomino-anterior positions of the child, the delivery of the head is not necessarily attended with much difficulty, as the rotation of the chin backwards generally occurs; nevertheless, as delays here are dangerous, this process of rotation, if not rapid, should be assisted: but we are surprised to find Dr. D. advising that "when the breech has escaped, give the trunk the required direction, so that the face shall look obliquely backwards in its descent, corresponding to the nearest synchondrosal point." This is objectionable, because, in the first place, it is too soon to operate as soon as the breech is delivered, the shoulders not yet having rotated towards the pubis; but the great objection lies that all such rotation of the body of the child is at the risk of twisting the neck, and, of course, injuring the spinal marrow. Rotation, therefore, should be effected not by means of the body of the child, but by the fingers of the operator, acting upon the side of the face, after the shoulders are delivered: this is time enough, and then, the head being extra-uterine, there will be no obstacle in effecting its rotation. If, however, this rotation of the face backwards be not effected, how is delivery to be accomplished? Dr. D. does not notice this question, which is very important; for, if traction be made, as is usually done, in the direction of the axis of the vagina, terrible results may ensue to the child, and even to the parent. But, if the body of the child be carried far back, so that its spine shall be nearly at a right angle with the sacrum and perineum, then traction will be safe and efficient: the occiput resting on the perineum and coccyx, the face and forehead will more readily descend under the arch, and this flexion of the head may be facilitated by pressure with the fingers on the upper maxillary bones, or on the os frontis—the head being thus made to present favourable diameters at the outlet.

Footling and knee presentations are less frequent, and perhaps less favourable, than breech presentations. In the management, Dr. D. observes that there is no special difference.

In cases of obstructed labour, in pelvic presentations, embryotomy, and sometimes craniotomy, are of course demanded, and occasionally, adds Dr. D., "bi-section of the neck."

Dr. D., after some notices of the frequency and causes of transverse presentations, intimates that, without assistance, the child will generally perish; nevertheless, he countenances the idea that children may be born by spontaneous evolution, with the shoulder under the arch of the pubis, as described by Dr. Douglas, if they be premature or of small size. He quotes Boer and Barlow, and might have quoted Velpeau and others, in confirmation also of version in the superior pelvis, as described by Dr. Denman. This spontaneous version, at or above the brim of the pelvis, should be studied by obstetricians, as the whole mechanism is important, and illustrates as well as confirms the value of artificial version, even before the os uteri has dilated, by what is now called the bi-manual operation. Dr. D. records of transverse presentations, 1 in every 284 deliveries.

The usual management is recommended by Dr. D., resorting to version by the feet, trying first the bi-manual method, or, if this fail, introducing the hand into the cavity of the uterus, and bringing down the feet. He does not recommend "version by the vertex" or head, which, by the bi-

manual method, is often more easily effected than podalic version. Our own countryman, Dr. M. B. Wright, of Cincinnati, in 1850, recommended cephalic version, even after the arm had been expelled, and powerful contractions of the uterus had ensued; his plan being to return the arm, and then make pressure on the top of the shoulder, on the side opposite to which the head is displaced, thus elevating the shoulder, while a hand applied to the upper and lateral part of the uterus determines the pelvis of the child towards the side where the head is located.

Should the uterus be powerfully contracted, Dr. D. has derived advantage from the relaxing influences of chloroform. If these measures fail, embryotomy must be employed. Dr. Davis gives some twenty cases illustrative of his practice.

There is one very important principle, in the management of embryotomic cases, which has not governed our author, and which, indeed, has attracted little attention from obstetric authorities. We allude to "version by the breech," after or even before evisceration.[1] It is the object of every practitioner to resort to version in all transverse presentations, knowing that the infant cannot be brought down double in the cavity of the pelvis, but that one end of the fœtal ellipse should descend first, so that the long axis of the fœtus should correspond to that of the obstetric canal. Why neglect this principle in embryotomy? Why, as was done by Dr. D., in Case CXLIII., after evisceration, drag upon the arm of the child to accomplish delivery, necessitating the passage of the head, and of the eviscerated body, simultaneously through the canal of the pelvis, greatly endangering the tissues, and welfare of the mother? This mode of operating, also, will often be ineffectual, as in Case CXLVI., where, traction upon the body failing, Dr. D. had to divide the dorsal spine to complete the delivery. So also, in Case CL., where traction on the spine, by means of the crotchet, failed, and he was obliged to resort to amputation of the arm, and then of the neck. The true principle is, to pass the crotchet, whether sharp or blunt, to the pelvis of the infant, either within or without the body, and thus, by an oblique traction, cause the breech to descend, effecting in this way an artificial imitation of spontaneous version, and precisely in accord with version by the feet when the child is alive. In Case CXLIV., Dr. Davis unwittingly performed this operation, for his crotchets were so fixed that, when traction was made, a preponderating influence was exerted on the lower portion of the ellipse, causing the breech to descend, while the shoulders and the head were retained, as Dr. Davis says, in "spontaneous evolution," or more correctly, it should be said, in "spontaneous version," as described by Dr. Denman. Hence, the rule of practice should be never to apply the crotchets to the spine, but always to some portion of the pelvis of the fœtus.

A few cases are detailed where division of the neck was necessary to effect delivery. Dr. Davis prefers to the decapitator of Dr. Ramsbotham, a long pair of curved scissors for this operation, an instrument which we have always employed. We cannot perceive the necessity, however, except in cases of deformity, of resorting to craniotomy for the removal of the head after section of the neck. Under these circumstances, perforating the head is more difficult and dangerous than when fixed by the body of the child. We have seldom found any difficulty in removing the head by means of the hand, as soon as the occipito-mental diameter is made to correspond

[1] *Vide* Principles and Practice of Obstetrics by Dr. Hodge.

with the axis of the pelvis. If this be impracticable, the crotchet, fixed in the foramen magnum, or into the mouth of the infant, will answer, or occasionally the forceps may be employed.

The opinions of Dr. Davis respecting the *Cæsarean operation* have been already stated. He prefers to imitate Dr. Osborn in resorting to embryotomy if there be 1½ inches by 3½ inches in the pelvic openings, as safer than the Cæsarean section. His opinions have not been altered by the publication of Dr. Radford's pamphlet (in 1865), recommending a more frequent recourse to the Cæsarean section; Dr. R. stating that 10 women out of 77, or 13 per cent. were saved, and 43 children were preserved.

In the present improved state of the science of obstetrics, taking into consideration the unexpected success, which has attended gastrotomy in ovarian and even uterine diseases, and the declaration of many of the Continental surgeons that gastro-hysterotomy has, under favourable circumstances, been successful in the proportion of 40 or 50 per cent. to the mother, and 50 to 70 per cent. for the children, we think that the whole subject demands a more minute investigation, especially as to the question, whether the great fatality of the operation is not mainly dependent upon an improper delay in its performance. Statistics are required as to the relative number of cases in which hysterotomy has been performed during the first or second stage of labour, before or after the bearing-down efforts have ensued, before or after the rupture of the membranes, and also as to the physical condition of the woman prior to the operation; and whether any other measures have been previously adopted for her safety or for that of her child. It should be determined also, if possible, whether anæsthesia contributes to the safety of the operation. We are inclined to the opinion, that gastro-hysterotomy, if performed during the first stage of labour while the patient is in a good mental and physical condition, and under the anæsthetic influence, would prove so much more successful, both to mother and child, that the question whether it or craniotomy is to be preferred, would be reduced to very narrow limits; and that the Cæsarean section would no longer be regarded as the most dangerous of obstetric operations. It is contended also by the advocates for the Cæsarean section that although the life of the child is comparatively unimportant as respects the mother, yet that its interests should not be entirely set aside in considering this subject. Hence, as at least 50 to 60 per cent. of children are saved by gastro-hysterotomy, it is inferred that a woman who has had one child sacrificed by craniotomy, for her own safety, ought to be subjected, in case of future pregnancies, to some risk for the sake of her children. Statistics, however, are yet wanting to elucidate this delicate point of professional science and ethics: in the mean time we must allow ourselves to be influenced by the eloquent appeal of M. Caseaux on behalf of the woman with all her social and religious responsibilities, when placed in opposition to those of an unconscious fœtus, whose life, even if preserved by hysterotomy, is so often evanescent, statistics exhibiting the melancholy fact that one-half perish under five years of age.

As to "Anæsthetics in Midwifery," Dr. Davis advocates their great importance, giving the preference to chloroform as being more certain and rapid in its effects, and, in his experience, without any fatal consequences. He has no doubt of its great influence in promoting relaxation of the uterine and pelvic tissues, thus acting as a substitute for venesection and opium, and preparing the patient for a more successful employment of required manual or instrumental assistance. The operation of craniotomy

may, in some instances, be prevented by its timely employment. He acknowledges, however, that it ought not to be given in natural labours, as they might be delayed, and as hemorrhage might result. He has known many instances where hemorrhage resulted from this circumstance, and would countenance, therefore, the advice of Dr. Beattie, of Dublin, of exhibiting ergot where chloroform was employed.

In this country, the practice is not very diverse; ether, however, is generally preferred, as no death results from its employment, while occasionally death from chloroform is reported in the medical journals. It is comparatively seldom given in natural labours; it is reserved for states of great nervous excitability, for inordinate uterine contractions, and for rigidity of the pelvic tissues. It is also employed frequently to facilitate the operation of turning, and also in forceps operations; seldom, however, except perhaps in version, is complete anæsthesia desired. Our own opinion is, that it is a more valuable agent than opium in diminishing nervous and uterine excitements, and therefore most important; but, at the same time, it should be used simply to diminish and not to suspend the sensibilities of the patient. She should always be conscious of the existence of her labour, and remain under the command of her accoucheur, even during the progress of artificial delivery, whether by the hand or by instruments.

In this critical analysis of the very interesting work of Dr. Davis, we have freely expressed our opinions as to the theory and practice which he has promulgated, endeavouring to point out the peculiarities of British opinions, as compared with those entertained in France and America, especially on points involving the mechanism of labour, and the treatment of obstructed deliveries. Notwithstanding the freedom of our remarks, they are presented with much diffidence, knowing that it is impossible to judge accurately of cases which have not been seen, or to determine positively on the relative advantages of different modes of treatment, especially as the author of the present work is evidently an obstetrician of much science, and enlarged experience, and who appears to have been a most successful practitioner. We trust, however, that some good will result, by fixing attention on disputed points, and exciting a more united and thorough investigation of the whole question of the mechanism of labour, and of course operative midwifery. H. L. H.

ART. XVIII.—*Estudos sobre a Diabete, Pelo Socio Correspondente, Dr. Abel Jordão.*

Studies on Diabetes, by Dr. Abel Jordão, communicated February 24, 1863, and published, in the "Memorias da Academia Real das Sciencias de Lisboa." pp. 200, quarto. Lisbon, 1865.

DR. ABEL JORDÃO has devoted himself to the study of diabetes for nine years. He has published several articles in relation to it, and as they have been approved by those members of the profession whose judgment he respects, he resolved to publish in one volume all that he had learned respecting this affection by reading and experience. The results of Dr. Jordão's researches seem to us to be so interesting that we shall lay before our readers a brief summary of them.

The first "Study" in the series is on symptomatology. A paragraph is devoted to a minute description and history of each symptom, with references in foot-notes to numerous authorities.

Diabetes is defined, an apyretic disease, always characterized by the presence of glycose in the urine, almost always by impotence, increase of the urinary secretion, appetite, and thirst, and often by suppression of transpiration, wakefulness, and emaciation.

Dr. Jordão divides the disease, in reference to its causes, into traumatic and internal, and in reference to its course or progress, into periodic, intermittent, and continued.

His bibliography of the subject, chronologically arranged, beginning with Constantinus Africanus in 1536, and ending with Marshal de Cabri, in 1864, includes 294 titles.

Symptoms of Diabetes.—1. Emaciation is not very manifest in a majority of cases till towards the close, although sometimes it is rapid. Femel saw a fat man attacked with this disease become lean in eight days; Heinskin mentions a patient whose weight fell from 92 to 67 kilogrammes in five months; Dufour (*Arch. Gén. de Méd.*, 1861, p. 69) speaks of one who, in some months, lost 54 kilogrammes. Home cites a patient with this disease who increased his weight 48 grammes daily from ten o'clock in the morning till noon, and decreased it 126 grammes from four till six in the afternoon.

Continuous emaciation accompanied by voracious appetite is one of the phenomena which has most attracted observation. It is conjectured to be due to the irregularity or exaggeration in the sugar-making function of the liver.

Skin.—In diabetes the skin is generally pallid, but it is not rare to see it retain its natural colour. Sometimes it is icteric. In two cases Dr. Jordão saw it bronzed.

The skin is generally dry; at times it simulates the consistence of parchment and becomes less hygroscopic. Dryness, however, is not constant. In this respect the skin is seen to vary in the same patient, and sometimes it remains normal. Ordinarily the covering of the chest and belly continues natural while that of the extremities is affected with dryness; there is an abated vitality of the skin; the hairs dry and fall.

In this malady the skin is very often the seat of eruptions of diverse kinds, some of which are perilous to the patient. Those which generally occur are porrigo, lichen, psoriasis, herpes, impetigo, furunculus, and anthrax. The relations between diabetes and these skin affections has not been fully studied.

Direct connection or association of anthrax with diabetes was first noticed by Cheselden in 1768, by Latham in 1811; and in 1840, Prout again called attention to it. Dr. Aguino da Fonseca, of Pernambuco (Brazil), assures us that anthrax is very frequent in that city, and its aspect is of such peculiar character that it is regarded to be diagnostic of diabetes. Ordinarily one only appears; this terminates to be followed by a second, a third, and so on successively, sometimes reaching to a great number; in one instance twenty-two were counted. As a rule, they appeared on the back of the neck and trunk, with very small orifices, smaller than those of ordinary anthraces, with reverted edges, having an internal cavity like that of a cyst. These tumours easily suppurate, the pus is very liquid, chocolate colour, exhaling the odour of fermented honey, and probably contained sugar, as did that from an abscess, which was analyzed by Capezuoli.

Facility in the production of pus, its colour and odour are, according to Dr. Fonseca, characteristic signs of the existence of diabetes, signs which cannot be ignored. The first anthrax which appears is generally not serious; but those which follow are so; their presence always aggravates the prognosis, especially if opened with a bistoury, as that practitioner observes. In such cases gangrene is immediately set up, advances rapidly, and sometimes the patient succumbs in the course of a few hours; Messrs. Menestrel and Kuchenmeister corroborate this statement.[1]

The skin in diabetes also suffers from a kind of erysipelas, a papulous eruption of an undetermined nature, a predisposition to phlegmonous erysipelas, a tuberculous eruption, general or limited, the tubercles slightly resembling smallpox pustules and containing a caseous matter.

Diabetic gangrene is another complication. It is preceded by the appearance of small rose-coloured spots beneath which depressions in the derma may be easily felt. Though out of proper order, the author speaks here of necroses occurring in diabetic patients—ulcers of the legs are not unfrequent.

The secretion of the skin of diabetics is generally diminished, but sometimes, after more or less exercise, cutaneous transpiration is abundant. The quantity of sweat secreted in a day is stated to have been in one case 1444, and in another patient 1680 grammes. These perspirations are sometimes partial, and sometimes they occur at particular periods of the day. The presence of sugar in the sweat of one diabetic was manifest before it appeared in the urine, although all other symptoms of diabetes were present.

3. Sensibility suffers slightly. Anæsthesia of the posterior cervical region has been noticed: and exaggerated sensibility over the spine or one side has been observed.

4. Audition is usually normal.

5. The sense of smell is impaired slightly in some cases, probably from dryness of the Schneiderian membrane and diminution of its secretion.

6. The taste, though generally normal, is in some cases perverted. Sometimes the patient has a persistent taste of sugar in his mouth.

7. Among the lesions of vision in this disease cataract is noticed; but happily the number of cataracts occurring in diabetics probably does not exceed two per cent. Amblyopia is more frequently observed, and sometimes complicated with diplopia. It occurs to a slight degree in the commencement of the disease, lasts three or four months, and disappears, but there is liability to relapse. Serious amblyopia, which only appears at an advanced stage of the malady, invades both eyes, but unequally. Its pro-

[1] Dr. Jordão appends to his work a note to say that when he wrote his account of furunculus and anthrax he was persuaded that these two affections were especial or peculiar in diabetes, but since, he has observed some particulars which have not been heretofore presented.

In individuals who suffer from cerebral softening in the chronic form the appearance of furuncles is frequent. They occur in all regions, but chiefly on the nucha, and are less painful than they usually are in persons not thus afflicted. They suppurate readily. The pus is mixed with a large quantity of dark blood which imparts to it a chestnut colour, and renders it very liquid. Their parietes and edges are of an obscure red, like the commencement of true external gangrene. Ordinarily they heal slowly, requiring twenty or more days, and their cicatrices long remain deep coloured spots like ecchymoses.

Dr. Jordão believes himself first to have noticed this fact, which he regards as a new symptom of cerebral and spinal softening, and although it lessens the diagnostic value of furuncle in diabetes, he thinks it important because it shows that this affection is affiliated with a lesion of the nervous system.

gress is generally slow. By means of the ophthalmoscope the papilla of the optic nerve is seen to be of a pearly white, diminished in volume, at times manifestly depressed or excavated, and commonly deformed in its circumference. The vessels emerging from it are tortuous, and the arteries less developed than the veins; the trunks of the vessels are quite visible, but their extremities are not easily followed. Sometimes signs of retinal hemorrhages having their seat at the angle of bifurcation of the vessels, or more rarely in their course, are noticed; some suffer fatty degeneration, but in some cases of amblyopia no lesions are discoverable.

8. The locomotive functions of persons affected with diabetes are slowly performed, and almost always accompanied with fatigue, which generally increases proportionably with the progress of the malady, till at last the patient is scarcely able to move. In the commencement of the disease patients complain of weakness while still possessing an aspect of health. Palsies are not very rare. Convulsions and tumours are also noticed. Cramps are quite frequent. Neuralgias, sometimes of the sciatic and sometimes of the intercostal nerves occur, as well as muscular pains.

9. Speech is rarely affected, but the voice sometimes becomes hoarse towards the close.

10. The intellectual faculties remain normal; but in advanced stages the patient becomes sad, apathetic, or irascible.

11. Almost all diabetics suffer from insomnia.

12. In general the appetite is strong, and at times increases to a true boulimia. In one case the daily food taken amounted to 13,000 grammes; and in two others 3,000 grammes of bread and 1 kilogramme of meat were eaten daily. It is asserted that diabetics prefer sugar and fecula to other articles of diet, but careful observation does not establish the assertion.

13. Thirst is generally excessive. The quantity of liquid taken is very variable: it is stated at from 4,250 to 45,000 grammes daily. It has been conjectured that the quantity of liquid drunk is in some degree in proportion to the quantity of amylaceous food consumed, but investigation does not sustain this notion. The phenomenon has not yet been satisfactorily explained.

14. The mouth exhales a peculiar, nauseous odour, which Dr. Jordão compares to that of iodine. The gums are pale and soft; sometimes, however, they are florid, spongy, painful, and bleed easily. The teeth in some cases become loose and fall out. Odontalgia from dental caries is frequent. In the beginning of the disease the tongue is moist and natural, but later is dryer. The tongue is usually flat. Aphthæ sometimes appear on it and on the parietes of the mouth. The buccal mucus is almost always acrid or rough as if it had been subjected to the action of tannin, especially on the palatine arch, and its epithelium is easily detached, forming white spots looking a little like aphthæ. The mouth is almost always dry, and the saliva viscid and alkaline. In some cases it contains sugar, but not in all.

15. Patients sometimes complain of a sense of strangulation. The pharynx is often injected and anginas are frequent in the onset of the disease.

16. Dyspepsia is frequent in the commencement of the malady, and in some cases the liver is hypertrophied.

17. Ordinarily patients suffer from constipation which alternates with diarrhœa which is often fatal when it occurs in the advanced stages of diabetes. Deficiency in the quantity of intestinal secretions, and in the

quality of the bile is supposed to account for constipation in this malady. The feces are usually of a lighter colour than natural, and sometimes horribly fetid. In the commencement of some cases they exhale an ammoniacal odour. They contain sugar and sometimes an increased amount of fatty matter.

18. Respiratory movements are neither accelerated nor retarded. Observations on the products of respiration give no satisfactory results. Proclivity to pulmonary affections seems to be augmented in diabetic patients.

19. The pulsation rarely exceeds 80.

20. The calorific function is abated, and the temperature of the body is below the standard of health.

21. The urinary and genital organs are the seat of erythema in some cases. Prurigo is very frequent. It occurs on the prepuce of men and on the vulva and at entrance of the urethra of women. The prepuce is often swollen, painful, and excoriated. The scrotum is sometimes corrugated, and in some instances the testes are atrophied.

22. The urinary function is performed easily in a great majority of cases; but dysury, strangury, and ischury are noticed by some writers. The desire to urinate recurs very frequently—two or three times an hour in some cases—and is often very urgent.

23. Generally the urine is of a clear straw yellow, or honey colour, but varies in this respect. Its transparency is often interfered with by the presence of mucus, blood, albuminous flakes, uric acid, &c. In some cases it has a chylous aspect.

24. The odour of diabetic urine is said to resemble that of honey, of violets, of hay, of osmazome, of milk, of veal, &c., but Dr. Jordão thinks that it is either inodorous or has a nauseous smell; it rarely retains its healthy odour.

25. The taste of diabetic urine, first noticed by Thomas Willis (1667), is sweet, like honey, but in many cases the sweet taste is wanting.

26. In the physiological state, according to Vogel, a well-fed adult, drinking freely, excretes in twenty-four hours from 1,400 to 1,600 grammes, and, drinking moderately, from 1,200 to 1,400 grammes of urine. Relatively to the weight of the body it is estimated that one cubic centimetre of urine is passed hourly for every kilogramme of weight.

In diabetes this quantity is considerably augmented, and is generally a principal symptom, varying from 5,000 to 8,000 grammes. The largest quantity well authenticated is 14,000 grammes. In one case in thirty-nine days the daily quantity varied irregularly from 4,000 to 10,000 grammes. In another case the daily quantity varied irregularly in the course of fifty-three days, during which observations were made in 1864 by Ordaz Mascarenhas, in Lisbon, from 1,500 to 25,000 grammes. But the received opinion is that the quantity of urine excreted does not exceed the quantity of liquids drunk by the patient.

27. The temperature of the urine, like that of the body, is diminished.

28. The density of normal urine, stated differently by ten authors, is from 1.017 to 1.074. It varies daily, and often at different periods of the same day in diabetic patients. In one case, observed by the author during twenty-one consecutive days, it varied irregularly from 1.012 to 1.019. In one case observations were made four times daily during sixteen days, at six and nine o'clock A. M., and at one and eight o'clock P. M., and it was

found to vary on one day from 1.010,500 to 1.014,700, on another from 1.012,600 to 1.021,000, and so irregularly.

29. Microscopic examination of diabetic urine at the moment of emission presents nothing notable; but after it has been voided some time, ferment globules, analogous to those of beer, or of yeast, are observable.

30. The reaction of diabetic urine varies; it will be acid during several successive days, and then be alkaline many days, and again become acid.

31. Under this number eight analyses of diabetic urine are given.

32. The quantity of water in normal urine passed in twenty-four hours, according to Becquerel, is from 800 to 1,500 grammes; and Sheritier says in diabetes the medium quantity is 1995.562 grammes; but our author thinks this is below the average.

33. The solids which physiologically vary from 32.786 to 48.024 grammes are found to be diminished in diabetes, according to Sheritier, Nicholas, and Gueudeville, but according to the analyses of Simon and Percy they are augmented.

34. Urea varies physiologically between 28 and 30 grammes. The amount present in diabetes is said by some to exceed, and by others to be inferior to the normal quantity. This wide difference in the result of observations of different writers, it is suggested by Dr. Jordão, may be due to the process employed to detect it; in this instance urea cannot be ascertained accurately by weight, because it crystallizes with difficulty in the presence of sugar, and in this disease it readily decomposes. Besides, the difference of diet used by patients when the analyses were made is sufficient to account for the diversity of opinion on this point. The quantity of urea varies with the diet and activity of the functions. Change from animal to vegetable diet and the reverse is accompanied by a change in the quantity of urea, being greatest on an exclusively meat diet. In the later period of the disease the urea increases considerably, and is regarded as a fatal sign. Between the density of urine and the quantity of urea present in it there is no relation; its proportion cannot be estimated from this quality. Experiment showed that urine of a density of 1.039 contained 21.50 grammes of urea, while that of a density of 1.035 contained only 5.51 grammes.

35. The normal quantity of uric acid in twenty-four hours, according to Becquerel, is from 0.4 to 0.6 gr. In diabetic urine it is much less, or altogether absent, according to some authorities. The conclusion from most recent observations is that it exerts little influence in this malady.

36. Hippuric acid is augmented in diabetic urine.

37. It is probable that benzoic acid, supposed to be present in diabetic urine, is due to the conversion of hippuric acid.

38. Xanthina is not present in greater or less quantity in diabetic than in normal urine.

39 to 49. Oxalate of lime, free ammonia, phosphates, chloride of sodium, fat, inosite, a peculiar extractive matter, prussiate of iron, creatine and creatinine, acetone, and cholesterine are reported to have been found in diabetic urine by different writers.

50. Albumen is found in the urine of some diabetic patients. Some authorities regard the presence of albumen in diabetic urine as a favourable indication, while others, of no less respectability, consider it alarming. The experiments of Cl. Bernard sustain the former view. He shows that an animal made diabetic by wounding the medulla oblongata, if the wound was high up, might die; but if, from the wound being at a lower point,

albumen appeared in the urine at the same time with the sugar, the morbid phenomena passed off rapidly.

51. Thomas Willis was the first to suspect the existence of sugar in diabetic urine, but Cawley was the first to demonstrate its presence, which he did in 1778 by means of fermentation. Others, in different countries, verified the results of his experiments, and now the presence of sugar in urine is considered the pathognomonic character of diabetes. The nature of this sugar was long doubtful. Grape sugar, prior to crystallization, deviates the plane of polarization to the left; but having been crystallized and then dissolved, it deviates to the right, like cane sugar.

M. Claude Bernard announced that diabetic sugar, which is of the same composition as liver sugar, is decomposed in the vessels seven or eight times more readily than grape sugar; that is, to procure their appearance in the urine, it is necessary to introduce into the bloodvessels seven parts of diabetic, but only one part of grape sugar. Limpert and Falk have confirmed Bernard's observations.

Diabetic sugar is found in the urine of suckling women, as well as in that of pregnant women, towards the close of gestation, and at times in that of old men. According to some experimenters, the presence of glycose is constant in the physiological state. Under certain peculiar circumstances, still in the physiological state, sugar has been observed in urine; after eating asparagus; after the use of cheese and alcoholic drinks; after indigestible food, &c. &c., and after the use of saccharine aliments.

Sugar is found proceeding from the blood formed by decomposition of the principles of urine in it.

Sugar is found in the urine of some persons immediately after having been subjected to anæsthesia through the agency of chloroform or ether, either from cerebral congestion or pulmonary perturbation. Also, in the urine of persons who respire for a certain time an atmosphere containing rather more than the normal proportion of carbonic acid.

In different pathological conditions, without the existence of diabetes, glycose has been observed in the urine. It has been found in the commencement of attacks of intermittents, chiefly of a pernicious character; in cases of facial and sciatic neuralgia; in asthma, hysteria, epilepsy, pleuritis, phthisis, and chronic gastritis; in epileptics after a fit, in delirium tremens, in mania, general paralysis; in infants during dentition; in chronic hydrocephalus; in old gouty and dyspeptic subjects; in acute myelitis, cancer of the uterus, congestion of the liver; in persons who have been struck upon the head, or over the hepatic region, sometimes it is observed transiently in the urine; it has been observed also in cases of individuals while under mercurial treatment for syphilis.

Sugar normally present in urine in different pathological as well as in the physiological states, escapes detection by reagents unless the ebullition is prolonged, and we wait for the cooling.

The quantity of sugar contained in diabetic urine is very variable. Analyses by many authors cited give from 29 to 177.14 grammes of sugar to the 1000 of urine, varying according to the severity, and stage, and complications of the malady. On the approach of death, sugar almost always disappears from the urine. The period of digestion augments the quantity without reference to the nature of the aliment. In incipient diabetes the night urine is often free from sugar.

According to experiments made by Dr. Jordão, the quantity of sugar in the urine varies with the time of examination after eating. In each in-

stance the urine was analyzed on sixteen successive days; the mean of the analyses is given in the following summary:—

Hours after eating.	Quantity of sugar in the urine.
14	43.493 grammes.
4	52.513 "
3½	53.421 "
2½	49.002 "

The largest proportion was found three and a half hours, and the least fourteen hours after eating.

In cases of diabetes in which scarlatina, measles, diarrhœa, smallpox, anthrax, pneumonia, and acute intestinal disease occurred, sugar was diminished, and even disappeared from the urine.

It has been asserted that the quantity of urinary sugar in diabetes is proportionate to the fecula ingested. This notion was combated in 1806 by Manuel Pereira de Graça, but has been recently revived by Bouchardat, and sustained by Schutzenberger. While Dr. Jordão admits that urinary sugar increases with the use of feculas, his own experiments, and the observations of others cited by him led him to declare that Bouchardat's proposition, that the glycose contained in urine is in constant proportion to the amount of amylaceous and saccharine aliments consumed, is fallacious. The density or specific gravity of urine does not indicate the quantity of sugar contained in it, nor is there any regularity in the quantity of sugar daily excreted.

52. Individuals afflicted with diabetes are impotent; the absence of erectile power almost always attracts the attention of patients, and occupies their minds. This symptom possibly indicates the influence of the condition of the medulla in the production of this complaint. To refer impotence in diabetes to general weakness is not admissible, because phthisical and other patients in a condition of great debility are not impotent. It may be due to nervous depression, which is marked in this disease. In some rare and exceptional cases the virile powers continue in the normal state, or are even exaggerated. Marechal de Calvi cites the case of a patient who, in the moment of copulation, felt acute pain, which started from the occipital region and extended over the whole cranium, and was accompanied with great heat in the head. In the early stage, while coition is still possible, seminal ejaculation is so rapid that the act of copulation occupies only a few moments. Observations lead to a conclusion that loss of virile power occurs in the advanced stages of this affection.

Amenorrhœa is frequent in diabetic women. The menstrual flow diminishes gradually, and is suspended entirely in the advanced period of the disease. Sterility is common, though diabetic women do sometimes conceive. It is remarked that they are insensible to venereal pleasures even from the commencement of the disease.

The progress, duration, termination, etiology, pathological anatomy, and comparative pathology of diabetes are considered in the "Second Study," which is divided into four chapters.

1. In general, diabetes is developed slowly, but sometimes it runs its course rapidly. Following a fall or blow upon the nucha, or other traumatic cause, the disease becomes quickly manifest; but its rate of progress will be influenced by the strength of the cause producing it, and the constitutional powers of the patient. When complicated with certain affections, as gangrene, apoplexy, &c., the disease may run a rapid course. Sometimes

diabetes proceeds from polyuria, at others from attacks of gout, and most frequently occurs without any preceding malady.

It is very difficult, if not impossible, to designate the symptoms which usher in the disease. They are so slight in character and irregular in sequence that the malady often reaches a more or less advanced stage before it is diagnosticated. But it may be said that thirst, derangement of the digestive functions, and polyuria are the first morbid manifestations; all other symptoms, occurring sooner or later, should be considered to be secondary.

The progress of diabetes is marked by three periods, which are neither very distinct nor characteristic, because many symptoms which ordinarily belong to one period are either entirely absent or become manifest in a more or less advanced stage. Dryness of the skin and emaciation, which ordinarily belong to the second period, are not perceptible till the third, and sometimes even they are altogether wanting.

The first period is thus characterized: Thirst sometimes great, especially after eating; slight constipation; dyspepsia in a slight degree, especially after repasts into which feculas enter largely; diarrhœas suddenly following the ingestion of food; slight inspissation of saliva; hæmorrhoidal attacks often followed by hemorrhages; sense of weight in the region of the liver; sense of general weakness; increase of fat; profuse sweating; slight epistaxis; exaggeration of the genital faculties.

The second period: Exaggeration of the symptoms of the first period, except the nasal and rectal hemorrhages; lesions of the gums, caries and pain of the teeth, disturbed vision, insomnia, emaciation, diminution of the genital faculties, subjective sensations of heat and cold, dryness of the skin, and some nervous phenomena.

Third period: Exaggeration of the symptoms of the second; vomitings, diarrhœa frequently alternating with constipation, more or less decided intellectual disturbance, serous infiltrations.

Though not mentioned in the books, Dr. Jordão says, that increase of fat and rectal hemorrhages are noted generally in the first period of diabetes.

When the complaint terminates favourably, the amelioration is slow or rapid, according to the treatment and period of the disease; affections of the gums and polyuria are the last symptoms to disappear.

The progress of the disease is suspended sometimes by different causes, but only to be resumed. It is supposed to be modified by the seasons of the year.

Diabetes exists under different types. The *alternate*, in which the complaint gives place to another, as gout. The *periodic*, in which the disease occurs after intervals of irregular duration of perfect health. The *intermittent*, in which the affection returns at determined periods after a respite, and the *continued*, which is the most common. These types are said to exist under different forms, called nervous, consumptive, abdominal, and thoracic, seemingly dependent on the constitutional proclivities of the patient.

2. The duration of diabetes is almost always long, unless complicated with other diseases. It is often many years in running its course.

3. The disease terminates sometimes in cure, but not frequently; at times it gives place to some other affection. Phthisis is a common termination. It also ends in pneumonia, purulent pleurisies, pulmonary gangrene, and paralysis of the thoracic organs. Apoplexy is one of the most frequent modes of termination.

4. Relapses are frequent. Diabetics, after enjoyment of perfect health for months, are often made sick again by some irregularity in living or imperfection of diet.

5. The frequency of diabetes, compared with other diseases, is rare. The records of four hospitals in Lisbon for 1835, 1836, and part of 1838, show that in an aggregate of 22,735 admissions there was not one case of diabetes. During the first quarter of 1839, of 2,018 cases admitted into the Hôpital S. José, two were diabetics. During the years 1840–41–42, 7,013 cases were admitted into the Marine Hospital of Lisbon, but none of diabetes; nor was there a single case among the 11,441 patients admitted into S. José in 1843. In the following year, in the same hospital, one diabetic patient was found in the 12,078 cases admitted: and in 1853, one in 10,000 admissions. In 1855 the total mortality of Lisbon was 6,119; of this number four deaths from diabetes are reported; and of the 5,700 deaths in 1862, two deaths were from diabetes. The Hôpital S. José, in the last six months of the year 1862, received 7,013 patients, of whom four were diabetics; and in the first six months of 1863, 12,133 cases, of which three were diabetics.[1]

ETIOLOGY.—1. Facts are related in favour of this affection being hereditary.

2. Most authors believe the disease to be more frequent among men than among women; but Dr. Jordão believes this to be due rather to habits of life than to any constitutional difference of the sexes.

3. According to a majority of writers diabetes occurs most frequently between the ages of thirty and forty years; but the statistics presented by our author show that it occurs generally between thirty and seventy, but is not rare in the extreme ages.

4. Persons of a lymphatico-nervous temperament are most liable to this disease.

5. It occurs most frequently in persons of strong constitutions.

6. Influence of climate in this disease has not been yet determined. Reliable statistics do not exist. Besides, it would be difficult to discriminate the effects of drinks, diet, &c., from those of climate. The disease is frequent in England and Holland, but no case is mentioned in the Russian hospitals, and the military inspector of hospitals did not see a single example of the disease among more than two millions of Russian soldiers. It is more frequent in hot countries.

In all the towns of France, containing a population of 10,000 and upwards, sixty-three men and twenty-eight women died of diabetes in the year

[1] The annual reports on "Meteorology and Epidemics," made by Drs. Ruschenberger and Wilson Jewell, published in the *Transactions of the College of Physicians of Philadelphia*, show that in fourteen years, from 1850 till 1863 inclusive, the total number of deaths in Philadelphia from all causes was 160,086, and of these only 90 were from diabetes, or an average of 1 to every 1778$\frac{1}{7}$ deaths. The annual mortality with the number of deaths from diabetes in Philadelphia is as follows:—

Year.	Total mortality.	Death from diabetes.	Year.	Total mortality.	Death from diabetes.
1850	8,488	6	1857	10,895	7
1851	8,871	7	1858	10,697	3
1852	10,155	2	1859	9,742	3
1853	9,711	5	1860	11,568	11
1854	11,815	3	1861	14,468	12
1855	10,457	4	1862	15,097	10
1856	12,334	7	1863	15,788	10
				160,086	90

1854. In England, in 1839, the number of deaths from this disease is reported to have been 214. Between the years 1837 and 1853, inclusive, five cases occurred in the hospital at Funchal, Madeira.

7. The winter season seems to favour its development.

8. Profession or occupation does not appear to be very influential in causing the disease.

9. Defective or deficient alimentation, or a diet in which there is excess of fecula or sugar, is usually considered to be among the causes of diabetes. The disease has been attributed to excessive use of onions, asparagus, radishes, alspice, and different condiments.

10. Fermented and distilled liquors, especially cider, as well as tea, used immoderately, are charged as causes of this malady.

11. Depressing moral affections, fright, excessive intellectual labour.

12. Abuse of venereal pleasures.

13. The excessive use of diuretic and emmenagogue medicines are enumerated among the causes of diabetes.

14. Affections of the medulla, obstinate neuralgias, asthma, nervous irritations, hysteria, hypochondria, irritations of the alimentary canal, or kidneys, suppression of accustomed discharges, or of eruptions, are supposed to be disposing or productive causes of the disease.

15. The suggestion that diabetes is contagious or may be epidemic, is not worthy of consideration.

16. Blows upon the nucha or any part of the cranium, followed or not by fracture, are among the most manifest causes of diabetes.

PATHOLOGICAL ANATOMY.—There is no special or constant lesion which characterizes diabetes; but lesions of the liver and medulla are most frequently met with.

1. *Lesions in the liquids.*—The constitution of the blood of diabetes is found to be in some respects abnormal. It is reported to contain in excess sugar, urea, chloride of sodium, fat, creatine, and creatinine, water, and to be deficient in phosphates. The quantities of albumen, fibrin, and globules are sometimes more and sometimes less than normal. It has an alkaline reaction, and some writers say that its colour has a milky aspect, due to the presence of an excess of fatty matters; but Dr. Jordão says, that in this respect he has observed nothing worth notice.

2. The cephalo-rachidian liquid is said to be in excess.

3. The serosities found in the cavities of the peritoneum, pleura, and pericardium contain sugar.

4. The bile is limpid, of a reddish-yellow colour, and of a density of 1.020. It contains sugar.

5. According to some observers the lymph abounds in sugar, and

6. The gastric juice is acid, and the intestinal liquids contain much sugar.

7. LESIONS OF THE SOLIDS. *Cerebrum and Cerebellum.*—Congestion of the cerebral mass; apoplectic spots between the thalami optici and tubercula quadrigemina; in the corpus striatum, and in the cineritious substance, points like sanguineous infiltrations, and notably softened, have been observed. Also softening of the tubercula quadrigemina is recorded. Sugar has been found in the substance of the brain more than once. In one case the cerebellum was found compressed by an osseous tumour in the occipital fossa. Lesions at the base of the fourth ventricle have been noted by several observers as well as by Dr. Jordão.

8. The medulla has been reported softened, and also hardened, and in a hyperhæmic condition.

9. The cerebral involucra are sometimes found without any observable lesions, but at others there is manifest evidence of their participation in the disease. Adhesions, thickening, injection, and purulent deposits of the membranes are reported.

10. Two different kinds of lesions of the nerves have been observed, hypertrophy and compression. Messrs. Duben, Huss, and Nyman cite four cases in which the pneumogastric was strangulated by calcareous concretions. Duncan mentions hypertrophy of the sympathetic, and Rayer of the renal plexus.

11. Sometimes the lungs are found healthy, and sometimes tubercular.

12. The heart and vessels are occasionally found diseased, but not necessarily in this malady.

13. The stomach and intestines are often very much dilated, the mucous surface injected, softened, or ecchymosed, and their parietes hypertrophied or sometimes atrophied.

14. Lesions of the liver are not always found after death from diabetes. Augmentation of volume either of a part or of the whole organ is frequent. Hypertrophy of the right with atrophy of the left lobe; and atrophy of the whole liver as well as fatty degeneration are mentioned. Congestion is set down as one of the most constant lesions. The aspect and colour are various. The lesions of the organ peculiar to diabetes are increased consistence, homogeneous or uniform appearance and dark colour. The hepatic cells are reported to be intimately united, pale, and very small; all contain a voluminous and brilliant nucleus. The quantity of sugar found in diabetic livers varies; in two cases none was found. These differences are attributed to the manner of the patient's death; if he died suddenly sugar is abundant, but if he perishes slowly or from some febrile affection, it disappears both from the urine and liver.

15. Softening and hypertrophy of the spleen are reported in some few instances.

16. The pancreas is usually found normal; but some instances of atrophy, fatty degeneration, and pancreatic calculi are noted.

17. Hypertrophy, with hardening or softening of the mesenteric glands, containing cheesy or calcareous matter, is mentioned.

18. The cavity of the pelvis, in one case, is reported to have presented recently formed false membranes, sero-purulent effusions into the peritoneum, hypertrophy of the coats of the rectum, &c.

19. In some cases the kidneys have been found normal. Home has noticed in them an acid odour. Their colour has been described as chocolate, ash, pale, yellow, deep red, &c. Almost all observers say that their consistence is softer than is normal. One case of atrophy of both kidneys is mentioned, but generally their volume is found to be augmented. The bloodvessels are found injected, and in some cases very much enlarged. Hydatids, cysts, calculi, cartilaginous plates, purulent points, dilatation of the tubules of the cortical substance, enlargement of the pelvis, have been noted by different observers. Sometimes sugar has been found in these organs.

20. The renal capsules are usually in a normal state.

21. In some instances increased size of the ureters has been reported, but usually they are found to be in a healthy condition.

22. The bladder is normal, but some cases of hypertrophy of its coats, and of dilatation are reported.

23. The urethra in one case is stated to have attained four times its natural diameter.

24. The prostate is usually natural. The same remark applies to the vesiculæ seminales, testes, bones, and fat.

Two lesions, which seem to be appropriate to the disease, are those of the liver and nervous system; the others noted belong to the complications, or are purely accidental, or are consequent upon some symptoms of diabetes. In the first class are tubercles, abscesses, gangrene, &c.; in the second, aneurisms, lesions of the bones, &c.; and in the third, lesions of the stomach, intestines, kidneys, and bladder.

One of the most important lesions noted by Andral, Wilks, and other observers, is congestion of the liver, so decided in character that the organ, instead of wearing its normal aspect of being of two substances, one yellow and the other red, it is found to be of a dark red throughout its extent.

There is something peculiar in the character of this intense hyperæmia. In diabetes the liver becomes notable on account of the great quantity of blood with which it is engorged, and the fact that all hepatic congestions are not followed by glycosuria, may be due to the diversity of the elements affected in diabetic and ordinary congestion.

This lesion not being constant simply shows that the liver is not always affected in diabetes, but there are certain forms of the complaint in which it plays an important part.

Certain general and partial hypertrophies, fatty degenerations, morbid transformations of its microscopic elements, in many cases go to establish the great frequency of lesions of this organ, and to give to them high importance.

The lesions of the nervous system, though not constant, have, however, a value very different from that assigned to those of other organs, from the importance attributed to them, not only in an anatomical and normal physiological state, but also in the pathological condition.

Observations on the origin of the sympathetic, the experiments of Claude Bernard, Becker, Harley, and Schiff on the influence of a wound of the base of the fourth ventricle on the production of sugar in the urine; those on the compression and on the galvanization of the medulla; cases of diabetes following blows upon the head; nervous lesions followed by glycosuria in many instances, and cases of diabetes consequent upon moral impressions, are more than sufficient reasons for giving importance to lesions of the nervous system in diabetes. The part played by the nervous system in the production of this disease is very great, which it is vain to dispute. Perhaps anatomy of the nervous system is not sufficiently advanced to enable us to recognize all its abnormal conditions in any disease, and hence there may be uncertainty in the minds of many observers as to its condition in many cases of diabetes.

Renal changes are esteemed now less important than they were formally. Hypertrophy and other lesions are easily explained by the exaggerated function of the organ. Indeed, this alteration is met with in polyurics, is wanting in diabetics, and may be readily produced in animals by extirpating one kidney. The irritating action of sugar on the tissue of the organ cannot be slight. Bernard saw inflammation and the formation of abscesses in the kidneys follow the injection of sugar in the veins.

Our author remarks, in apology for giving so many details, that minute

circumstances, which at the time of noting them are often useless, may, perchance, become of immense future advantage in studying disease.

COMPARATIVE PATHOLOGY.—Diabetes may be caused in animals temporarily, by wounding the base of the fourth ventricle, or by a sharp blow on the occipital region. These facts have been noted by different experimenters, who conclude that generally glycosuria lasts from one to two days in rabbits, and from six to seven in dogs.

M. Pavy has made some experiments in this connection. In three he cut the descending part of the medulla oblongata, decapitating the animal, and cutting the medulla to its centre. Seven were made on the sympathetic (under the idea that it transmits the influence of the cerebro-spinal system to the liver), dividing the branches which accompany the vertebral artery, the ascending branches of the superior thoracic ganglion; separating the carotic ganglion on one side, and afterwards both; and the superior cervical ganglion; all these operations, conducted with artificial respiration, were followed by the appearance of sugar in the urine. Irritating the brain (cerebrum), separating it from the medulla oblongata by cutting its crura, cutting the spinal medulla in the cervical region with the two pneumogastrics, or the latter separately, and at last separating the sympathetic in the thorax, sugar did not appear. From these experiments he concludes: 1st. That the liver receives from the medulla the force which presides over its chemical acts of nutrition: 2d. That transmission is not made by the pneumogastrics: 3d. That it must be admitted that the medulla acts on the liver through the sympathetic; and 4th. That the sympathetic alone participates slightly in these chemical actions.

Harley reports that the injection of alcohol and ether into the portal vein of animals produces a glycosuria, and Pavy, that the same phenomenon follows the introduction of phosphoric acid into the small intestines.

Horses fed on oats altered by humidity, suffer temporarily from diabetic phenomena.

Instances of spontaneous diabetes in animals are very few. Leblanc reported (1850) to the Academy of Medicine of Paris a case of diabetes in a bitch, between six and seven years old, which had been always fed on meat. Recently[1] M. Beranger-Féraud saw a macaque, fed exclusively on animal substances since its arrival in France, for the purpose of enabling it to resist the cold, die of diabetes at the end of nine months. Its symptoms were rapid emaciation, incessant thirst, increase of the renal secretion with sugar in the urine, amaurosis, and convulsive phenomena.

These observations suggest that exclusive animal diet neither cures nor prevents the disease.

The author hopes to present soon his "study" on the diagnosis and prognosis of diabetes in continuation of this valuable paper.

W. S. W. R.

[1] Gaz. Méd. de Paris, 1864, page 324.

ART. XIX.—*Clinical Notes on Uterine Surgery; with Special Reference to the Management of the Sterile Condition.* By J. MARION SIMS, A. B., M. D., etc. etc. 8vo. pp. 401. New York: William Wood & Co. 1866.

THE present collection of "clinical notes" does not cover the entire field of "uterine surgery." The accidents of parturition—fistulæ of the bladder, rectum, and vagina; laceration of the perineum, uterus, etc.—are not even touched upon. In reference to the accidents of parturition, and their surgical treatment, the author promises to prepare, at no distant day, if time and circumstances permit, a fully illustrated monograph. The volume before us presents simply an exposition of the causes of sterility and a description of the surgical appliances adapted to remedy if not all, at least a majority of those causes. This of itself constitutes, confessedly, a most important branch of uterine surgery.

Like all teachings in medicine or in surgery based strictly upon the results of clinical observations, especially when the field for observation has been ample and the observer is one in whose skill and accuracy full confidence can be placed, the notes of Dr. Sims will be found replete with reliable practical instruction. The reputation of Dr. S. for success in the application of surgical means for remedying uterine accidents and abnormities, stands sufficiently high both in this country and in Europe, while his opportunities for the proper cultivation of the field he has chosen as his speciality, have been sufficiently extensive to stamp all his teachings with no slight degree of authority. Even should not all the plans of treatment recommended by him be permanently adopted as the best, his teachings throughout are of that suggestive character which must lead to a more intimate acquaintance with the true character of the several affections and accidents of which he treats, and to such improvements in the means for their treatment as the nature of the case will admit of.

Dr. Sims enumerates the conditions essential to conception as follows:—

"1. It occurs only during menstrual life. 2. Menstruation should be such as to show a healthy state of the uterine cavity. 3. The os and cervix uteri should be sufficiently open to permit the free exit of the menstrual flow, and also to admit the ingress of the spermatozoa. 4. The cervix should be of proper form, size, and density. 5. The uterus should be in a normal position, i. e., neither anteverted, nor retroverted, to any great degree. 6. The vagina should be capable of receiving and retaining the spermatic fluid. 7. Semen with living spermatozoa, should be deposited in the vagina at the proper time. 8. The secretions of the cervix and vagina should not poison or kill the spermatozoa."

Each of these conditions is considered separately, with a very full and candid examination into the cause or causes by which it is destroyed, and when the abnormity is capable of removal the means are described by which such removal is to be effected.

The practical portion of the work is preceded by an inquiry into the method of uterine examination, or, more strictly speaking, by a very full exposition of the author's own method of ocular exploration, with a description of the instruments invented by him to aid in its accomplishment.

The section on the non-occurrence of conception excepting during menstrual life, contains nothing absolutely new, it is nevertheless replete with

interest. Some portions of it, however, have but a very indirect relation to the question discussed.

Dr. S. remarks that "many women conceive without menstruating." Put in this general way, the position is not exactly correct—we know of no instance in which it has been absolutely proved that conception took place previously to the appearance of the menstrual flow. A similar statement is made by Dr. S. himself. During, however, menstrual life, women who conceive very rapidly, have been known to become several times pregnant notwithstanding there was no evidence of the return of the menses during the intervals between their successive pregnancies. Such cases have, as we have remarked, fallen under our notice, though we cannot say that they have been of very frequent occurrence.

The second section, in which are considered the disturbed conditions of menstruation resulting from various morbid states of the uterus, and the surgical means for their removal, is very complete. Every point connected with the subject is fully illustrated by appropriate cases derived chiefly from clinical notes collected by the author in the course of his own practice. The teachings of Dr. S. in respect to abnormal menstruation strongly press upon the practitioner the importance of tracing carefully to its actual cause every disturbance of the menstrual function, this being, in many cases, the only means of determining the proper measures to be pursued for its prompt and permanent rectification.

The disturbed conditions of menstruation treated of by Dr. S., are its absence, its deficiency and excess, and its painful character. The account given of menorrhagia—from granular erosion—from fibrous engorgement of the cervix uteri, from fungoid granulations, polypi, fibroid tumours and inversion of the uterus, is premised by the following remarks:—

"According to modern views, the menstrual fluid is not a secretion, but an exudation of blood from the lining membrane of the cavity of the uterus, which acquires its peculiar qualities by admixture with the secretions of the cervix and vagina as it passes out."

A recognition of this physiological fact is essential in order that a proper treatment of the several disturbances of menstruation may be adopted.

It is pretty certain, we think, that the non-establishment of the menstrual flux in young women, and also its pale and scanty character in early life, is due, in the majority of cases, to a torpid state of the vaso-motor nerves of the ovaries and uterus. Under such circumstances, it is now pretty well understood, that the proper administration of electricity is especially valuable as an emmenagogue. This has also proved successful when the catamenia do not appear after labour, or have been suspended by a cold shock, or mental anxiety.

The views in respect to the pathology of dysmenorrhœa or painful menstruation, and the means for its relief laid down by Dr. S., have received the sanction of some of our most distinguished authorities on the diseases of females, and yet we do not see how it is possible to explain satisfactorily the entire phenomena of dysmenorrhœa as presented in the more severe and persistent cases, by referring the disease to a physical condition of the os or cervix uteri or both, calculated to obstruct mechanically the egress of the menstrual blood from the cavity of the womb. When the narrowing of the os or cervix is attended with an inflamed condition, either acute or chronic, of the parts, we can readily understand that the menstrual flow may be attended with pain, but not very readily, even then, why at the menstrual period there should be, as is so frequently the case,

the formation in the uterus and the discharge from it of a true decidual membrane. We are not prepared at present to enter upon a proper consideration of the subject. We feel persuaded that there is a sufficient series of well authenticated facts upon record to render very doubtful, to say the least, the accuracy of the proposition laid down by Dr. S. as an axiom, namely:—

"That there can be no dysmenorrhœa, properly speaking, if the canal of the neck of the womb be straight, and large enough to permit the free passage of the menstrual blood. In other words, that there must be some mechanical obstacle to the egress of the flow at some point between the os internum and the os externum, or throughout the whole cervical canal."

The cause preventing the ingress into the womb of spermatozoa are occlusion, wholly or in part, of the os tincæ, with induration of the cervix, often produced by the prolonged and indiscreet use of caustic applications. Several cases are adduced in illustration of this cause of sterility and of the results of a surgical operation instituted for its removal. An operation the object of which is, by appropriate incisions into the neck of the uterus, to enlarge the calibre of its canal, and to prevent the subsequent diminution or closure of the enlargement thus effected.

A case of sterility is related in which hypertrophy of the cervical mucous membrane, the consequence of chronic inflammation of the cervix, gave rise to a valvular condition of the os tincæ, a projection upwards of the lower lip of the os, giving rise to a kind of semi-lunar form of the latter, presenting no obstacle whatever to the exit of the menses from the cavity of the uterus, but effectually impeding the ingress of anything into that cavity. This valvular condition being removed by the knife, the os was brought back to a perfectly natural condition. Notwithstanding the feeble state of this lady and the length of time that had elapsed since the birth of her last child, conception took place one month after the operation. She went the full time, and was safely delivered of a fine boy. Dr. S. examined the uterus some four or five months after delivery, and found its condition to be about the same as it was at the time of conception. The case is one of interest as illustrating one of the mechanical obstacles to conception. It is not an exceptional case, Dr. S. having met with others similar to it.

Various diseased conditions of the cervix uteri as causes of sterility are noticed in section fourth—as flexion, with a conical shape of the cervix, induration, hypertrophy, elongation, and granulation, with the remedies proper for the removal of each of these abnormal states.

The subject of amputation in cases of excessive elongation of the cervix uteri is very fully discussed. Dr. S. is decidedly in favour of a resort to the operation whenever it is clearly indicated. It does not, he assures us, interfere with conception, and he estimates the danger attendant upon it as no greater than that upon incision of the os and cervix. The statistics of the operation, as adduced by Dr. S., would certainly seem to bear him out in his favourable conclusions in regard to its safety and harmlessness when carefully performed, startling as these conclusions may appear to some who have but partially studied the subject and have little if any clinical experience in respect to it.

Anteversion, retroversion, flexion, and procidentia of the uterus as causes of sterility, are discussed in Section V. of Dr. S.'s notes.

The account given of the character, causes, results, and treatment of

the several forms of uterine displacements is particularly clear and instructive.

It is strange that questions apparently of so easy solution when referred to the test of clinical observation, as those appertaining to the frequency of uterine displacement, the symptoms to which it gives rise, and the proper means for its management, in the several forms under which it occurs, should have given rise to so much controversy among physicians, and such very opposite views among those of equal eminence, and with equal opportunities, seemingly, for arriving at correct conclusions. By some the infrequency of ante- and retroversion and flexion of the womb is insisted upon, or who, when these displacements do occur, look upon them as matters of little importance; while, on the other hand, there are those who maintain that these displacements are of very frequent occurrence, and attribute to them almost every disease under which the female may labour, certainly all the nervous symptoms of which she may complain. It is only after much experience that any one can strike the true line between these two opposite views.

As the terms version and flexion are often used by writers on the diseases of women with so much looseness as to puzzle the young practitioner in determining positively, excepting in extreme cases, the presence or absence of these conditions of the womb, with their character and extent when present, we copy here the exact description of these accidents given in the notes before us.

"The uterus," remarks Dr. S. "occupies, normally, very nearly a central position in the pelvis, being, perhaps, a little nearer to the sacrum than to the pubes. Its long axis should stand at about right angles to that of the vagina; the fundus pointing in the direction of the umbilicus, and the os tincæ towards the end of the coccyx. The fundus may be tilted a little one way or the other without the position being necessarily abnormal. The condition and contents of the bladder and rectum may temporarily influence it to some extent. If it turns forwards or backwards for 25° or 30°, it does not amount to malposition; but if to 40° in either direction, without soon rectifying itself, it is abnormal, and usually goes from bad to worse, till the malposition becomes persistent. If the uterus fall backward in a line drawn from the os to the promontory of the sacrum, it will describe an angle of 45°, and will present its broadest surface to the pressure of the superincumbent viscera, which will necessarily force it eventually lower and lower; and if turned forward to the same extent, the same power exerted on its broad posterior surface necessarily increases this abnormal tendency. But an anteversion never goes relatively to so great an extent as a retroversion, simply because it meets with more resistance. Anteversion often stops at 45°, but may go to 90°, as when we have a complete version, with the whole organ lying flatly down on the anterior wall of the vagina, and parallel with it, while a retroversion seldom or never stops under 90°, and often goes to 135°, simply because there is less opposition to its downward progress. It then follows that if the fundus of the uterus is found constantly lying just behind, or even near, the symphysis pubis, it is an anteversion, but if it is found lying persistently back under the promontory of the sacrum, it is a retroversion. But when only the body of the uterus is turned forwards or backwards, the os seeming to be in rather a normal relation with the vagina, there is necessarily a bending of the cervix somewhere between the os externum and the os internum, and we call this flexion. Most, if not all, versions become in time flexions, so that, as a general rule, they are but different stages or degrees of the same thing."

Speaking of the several causes of version of the uterus, Dr. S. says that, in many instances of anterior curvature of the cervix uteri, this has seemed to result from an amorphous growth on its posterior surface. The growth alluded to is not described in the books. It has a fibro-

cartilaginous feel. Dr. S. has seen a dozen cases in which it was present. It has a somewhat triangular shape, always pointed below. It very generally projects a little below the insertion of the vagina. Nothing similar to it has been seen by Dr. S. growing on any other portion of the uterus. He has met with it in two cases where there was no curvature of the cervix: both patients were sterile; the cervix was incised in both; in one conception took place at the end of four months, in the other at the end of eight months. Previously to being seen by Dr. S. both patients had had an attack of metro-peritonitis. It may, therefore, be inferred that the growth alluded to may have been possibly the product of inflammation. It does not interfere of itself with conception or gestation. In the other instances seen by Dr. S. he was unable to determine any probable predisposing cause. The growth has a sessile attachment to the neck of the womb, perhaps half an inch wide above, narrowing as it descends. It can be diagnosed with the greatest facility by the bimanual method of palpation.

The author's somewhat minute directions for the treatment of the several displacements, with the histories of the cases given in illustration of its results should be carefully studied by all who are desirous of becoming familiar with the surgical appliances best adapted for rectifying the malpositions of the womb, and for its retention as nearly as possible in its normal position.

In the following remarks in respect to pessaries there is much truth: "Some practitioners condemn pessaries and ostracize them altogether, while others advocate them perhaps too universally. As in the case of most disputed points, the advocates and opponents of the instrument will both be found to have a certain amount of truth in support of their respective views. Pessaries, according to Dr. S., are necessary evils. We should do without them whenever it is possible; but where their use is demanded it is important that the size and form of the instrument, be such as will best answer the indications of each case.

The mistakes made in respect to pessaries arise, either from

1st. In resorting to them when there is some form of metritic inflammation present.

2d. In selecting an inappropriate instrument.

3d. In making it too large. Sometimes too small; or,

4th. In allowing it to remain too long without removal.

The causes by which the vagina is incapacitated from receiving and retaining the spermatic fluid are considered in Section VI.

The ordinary obstacles to the introduction of the semen are imperforate hymen, vaginismus, and atresia of the vagina, or its entire absence. The causes which prevent the retention of the seminal fluid in the vagina after its introduction there are an abnormal shortness of the canal—excepting in cases where there is, from any cause, an open os uteri fixed permanently in a direct line with the ejaculative force—and the presence of certain forms of retroversion of the womb.

The most interesting portion of this section is that which relates to what the author has denominated vaginismus. A condition in which there exists an excessive hyperæsthesia of the hymen and vulvular outlet, associated with an involuntary spasmodic contraction of the sphincter vaginæ. This spasmodic contraction is brought on by the gentlest touch, even that of a camel's-hair pencil or fine feather, attended with an amount of agony sufficient to cause the patient to shriek out, the pain induced being compared

by her to what might be supposed to result from thrusting a sharp knife into the sensitive part. The pain is worse in some cases than in others. The pain and spasm are generally so great as to render sexual intercourse impossible.

The disease is much more frequent than is generally supposed; it is proper, therefore, that every practitioner should make himself familiar with what is known in reference to its pathology and treatment. There can be no difficulty in regard to its diagnosis—indeed, we know of no affection of the parts implicated with which it could possibly be confounded by any intelligent practitioner.

The sensitiveness exists at all parts of the vaginal outlet. It is usually very great at and near the meatus urinarius on each side, where the hymen takes its origin, but still greater near the orifice of the vulvo-vaginal gland; often, however, the most sensitive part is at the fourchette, where the hymen projects upwards. The whole vulvular or outer face of the hymen is sensitive, but it is more so along its reduplication or base. The slightest touch here gives rise to intense pain and an involuntary spasm of the sphincter muscle, both of the vagina and anus. In some cases the sphincter ani feels like a ball of ivory. By one patient it was supposed to be a tumour that would require excision.

Vaginismus, in its most aggravated forms, is unattended with inflammation; Dr. S. has, however, met with several cases in which there was redness or erythema at the fourchette. Usually the hymen is thick and voluminous. Often when the finger is forced through it, its free border feels as resistant as if bounded by a fine cord or wire.

The treatment recommended by Dr. S. consists in the removal of the hymen, the incision of the vaginal orifice, and its subsequent dilatation. The last, we are informed, is ineffectual without the first two, but is essential to easy and perfect success with them. For a detailed account of the several steps in the operation for the cure of vaginismus as proposed by Dr. S, we refer such of our readers as desire to become familiar with its details to the volume before us.

The entire subject of this very painful complaint is treated of by our author with uncommon clearness. We could have wished, however, that some of the details he has entered into had been omitted. Certainly, all that was necessary, in order to establish the facts in connection with which these details are introduced, was a general statement that coition is rendered possible and painless in cases of vaginismus, and may be followed by conception, if practised whilst the female is under the influence of etherization. We really do think that the practitioner referred to by Dr. S., who condescended to make it his business "to repair regularly to the residence of a certain couple, two or three times a week, to etherize the poor wife," who suffered from vaginismus, so as to permit of sexual intercourse, had not even an ordinary amount of self-respect, or any very exalted views of his proper dignity as a member of the medical profession.

The absence of living spermatozoa in the male semen as a cause of sterility is the subject treated of in the seventh section. The cause of the absence of living spermatozoa from the semen of the non-superannuated male is not very clear in any case. The non-ejection of spermatozoa by the male into the vagina of the female in cases where there is no impediment to their entrance, may result from either congenital malposition of the testes, chronic inflammation of these organs, or stricture. In the first

two cases the testes fail to produce spermatozoa; in the third the semen regurgitates into the bladder.

"When the testes are retained in the abdomen, they seem to remain in a rudimentary state, and never attain the power of secreting semen with spermatozoa."

The absence of spermatozoa may also be due to an obstruction of the excretory ducts of the testes; usually the result of acute inflammation of the latter.

Most cases of impotence from the absence of living spermatozoa in the male semen are irremediable. In cases dependent upon regurgitation of the semen into the bladder, in consequence of the presence of urethral stricture, the proper remedy is the removal of the stricture by the usual means.

The eighth and last section of Dr. S.'s work is devoted to a consideration of the abnormal conditions of the secretions of the cervix uteri and vagina which are liable to produce a destruction of the spermatozoa. This change from the healthy condition of the secretions is almost always, perhaps invariably, brought about by inflammatory action. Of the forms of leucorrhœa dependent upon the inflammation of the lining membrane of the vagina and of the cervix uteri, Dr. S. gives a very concise but satisfactory account, and presents a judicious summary of their appropriate treatment.

An inflamed condition of the mucous membrane of the cavity of the uterus is liable to give rise to a discharge from the latter of a morbid secretion which is also destructive to the vitality of the spermatozoa.

"Endo-metritis has recently been the subject of considerable investigation. Scanzoni, Routh, and others, have written much upon it. Dr. Hall Davis has exhibited to the Pathological Society the uterus of a woman who died of this affection, and Dr. Oldham has shown me," says Dr. S., "a number of valuable specimens in the museum of Guy's Hospital, illustrative of the varieties of this disease; which may exist in various degrees of intensity, from a merely congested and eroded state of the uterine mucous membrane to the extent of great disorganization. General constitutional remedies are, of course, indicated, but are never of any great value without local treatment. Nothing in uterine disease is more difficult to remedy than endo-metritis. The first great principle to guide us is that of insuring a very free exit from the cavity of the uterus for the secretions therein generated. The second is that of appropriate local applications to this cavity for the purpose of modifying or healing, as it were, its diseased surface."

In cases where the canal of the cervix uteri is contracted, Dr. S. has freely divided it with great relief. During the menstrual age it is all important to prevent the retention of the secretions of the uterus, and hence the importance of a free division of the cervix.

"With a patulous cervix, we may use medicated injections, or apply nitrate of silver in ointment, as recommended and successfully done by Prof. Fordyce Barker, of New York."

"There is a mild form of endo-metritis that seemingly gives rise to no secretions whatever, which nevertheless," according to Dr. S., "is attended with great suffering, and is often passed unnoticed, or rather undetected, for a long time. Dr. Routh has particularly noticed this form, and calls it fundal endo-metritis."

To diagnose this form of endo-metritis, place the patient in a semi-prone position on the left side; then introduce the lever speculum; and hook slightly a tenaculum in the anterior lip of the os tincæ, draw this gently forwards, pulling open the os so as to be able to look directly into it; then pass the sound, previously warmed, gently along the cervix, using not the

slightest force, but almost letting it go, as it were, by its own gravity, to the fundus. No pain is experienced until the sensitive point is reached by the sound, when the most intense agony is produced, which sometimes does not cease for hours afterwards.

Dr. S. thinks it highly probable that many unexplained neuralgic pains may yet be found to be symptomatic of some slight endo-metritic affection. He believes that in many cases in which the spermatozoa are found to die quickly in the canal of the cervix the real source of the mischief will probably be found to exist in the cavity of the uterus.

Dr. S. has satisfied himself that the secretion of the cervix uteri is often destructive to the spermatozoa, even when, apparently, almost normal.

"This," he remarks, "must depend upon some other quality than mere alkalinity, for I have often found all the spermatozoa in the cervical mucus dead, while it manifested no unusual degree of alkalinity, when tested by litmus paper. But when placed under the microscope it showed an uncommon number of epithelial scales. This demonstrated an abnormal action in the glandular apparatus, that gave rise to this secretion, which seemed to kill the spermatozoa more by its density than by chemical action; for I have noticed that they lived longer in that portion of the mucus that had the fewest number of epithelial scales; and, *vice versâ*, died quicker in that portion that had the most; and this, too, when litmus paper showed no difference in the chemical character of the two."

In the foregoing notice of the work of Dr. S, we have not attempted a complete analysis of its contents; many of the important questions embraced in the rich collection of clinical notes, of which it consists, we have passed unnoticed. The entire work is one from the study of which the physician in general practice, much more he who has adopted the diseases of females as his speciality, will derive valuable instruction. Many of the author's improvements in the surgical treatment of uterine affections, with the detail of the cases by which they are illustrated and enforced, appeared originally in former numbers of this journal; to a certain extent, they are familiar, therefore, to perhaps the majority of our readers. The time, however, devoted to their reperusal will not be thrown away. The language of Dr. S. is sufficiently clear, and his description, whether of diseased conditions or operations, precise and intelligible.

In some of the experiments performed by Dr. S. in illustration of certain points connected with the subjects discussed by him—we refer more especially to those described in Sections VI. and VII.—he has, at least in our estimation, overstepped the bounds of propriety, which is not justified simply by the fact that his work is a purely scientific one, and intended solely for the use of scientific readers. The value of the physiological truths established by certain of the experiments referred to, we freely confess, but even this consideration we scarcely think can be received as a full sanction of them.

D. F. C.

BIBLIOGRAPHICAL NOTICES.

ART. XX.—*Transactions of American State Medical Societies:—*

1. *Fifteenth Anniversary Meeting of the Illinois State Medical Society, held at Bloomington, May 2d and 3d*, 1865. 8vo. pp. 152.
2. *Transactions of the Vermont Medical Society for the year* 1865. 8vo. pp. 62.
3. *Transactions of the Indiana State Medical Society at its Sixteenth Annual Session held at Indianapolis, May 15th, 16th, and 17th*, 1866. 8vo. pp. 110.

1. THE volume before us, issued by the *Illinois State Medical Society*, opens with a public Address to the members of the Society and the citizens of Bloomington, on the "Nature of Medical Science and its Relations to the Community," by Dr. N. S. Davis, of Chicago. The address is a sound philosophical exposition of the character and quality of legitimate medicine, and its claims upon the confidence and support of every community. The writer points out very clearly a fact too often lost sight of in discussions involving the true value of medical science; namely, that the benefit it confers is not restricted merely to assuaging the pain, shortening the duration and reducing the mortality of disease, subsequent to its occurrence. The insight which the physician has acquired into the causes of diseases, the circumstances under which they are developed, the laws governing their diffusion, and the means for their prevention, neutralization or destruction, have been made more or less subservient to the welfare of man as the basis of a true hygiene or sanitary science. There is scarcely a community that realizes the actual extent to which it is constantly enjoying the substantial benefits derived from this department of medical knowledge.

By Dr. N. Wright, of Chatham, some remarks are presented on "Diuretics in the Treatment of Malarious or Periodical Fevers." It is to those chronic cases of malarial poisoning met with in patients living in a malarial region, who have suffered many attacks of periodical fever, with disturbance or suspension of the various secretions, and, in consequence, necessarily, with an abnormal condition of the entire mass of blood that the remarks of Dr. D. chiefly refer. Such cases are marked by a sallow, waxen appearance of countenance, yellowness of the conjunctivæ, torpor of the intellect, general anæmia, with infiltration, to a greater or less extent, of the cellular tissues. The great and leading indication in such cases is to restore the various secretions to their normal condition, and to eliminate from the blood the effete matter with which it has become loaded. Among the means adapted to that end, one of the most efficient, according to Dr. W., is to be found amongst the diuretics. He recommends acetate of potash, freely diluted with water, about one drachm to the pint, two or three times a day. He has tried it, repeatedly, he tells us, during some two years, and usually with decided success. Dr. W. does not dispense with quinia to check the paroxysms, nor with some mercurial preparation to remove the partial congestion, but uses these latter in conjunction always with the acetate of potash.

Dr. E. L. Holmes, of Chicago, presents a report from the "Special Committee on Diseases of the Eye." The report presents a brief notice of iritis, its diagnosis, and treatment, from its commencement, by the local application of atropia in the form of solution or substance. A reference is also made to two cases of destructive choroiditis connected with attacks of cerebro-spinal meningitis; and to two cases complicating severe erysipelas of the head and face; and a brief notice given of two cases in which paralysis of the muscles of the eye followed an attack of diphtheria.

There are some obscure points in respect to the connection which exists

between Bright's disease of the kidneys and certain affections of the retina which require elucidation by more close and extended observation.

"What form of albuminuria is most liable to complication with fatty degeneration of the retina? How large a proportion of patients affected with albuminuria suffer from amaurotic symptoms? It is worthy of notice," says Dr. H., "that in these cases of retinitis, the affection of the kidney can be diagnosticated with almost absolute certainty, by the ophthalmoscopic appearance of the retina alone. During the past year I have been consulted in two cases of amaurotic disease, in both of which the ophthalmoscopic appearance of the retina led to the suspicion that the patients were suffering from albuminuria. The examination of the urine confirmed the opinion."

The history of an "Epidemic Erysipelatous Fever" which prevailed at Waverly, Ill., during the winter of 1864, is given by Dr. R. E. McVey. The locality is a high rolling prairie, with a fine loamy soil, slightly mixed with sand; it is sufficiently drained, and sheltered by timber from the northwestern winds. The water used for domestic purposes is obtained from wells, at the bottom of which are found a continuous bed of slate and sandstone, mixed with occasional striæ of stone coal. The country is in a high state of cultivation, and there exists, apparently, no more cause for epidemics than in any portion of the country. During, however, the winter of 1864, there was an epidemic of cerebro-spinal meningitis, which proved very intractable; through the summer an epidemic of scarlatina prevailed, and when cold weather set in erysipelatous fever made its appearance, which exceeded in fatality even cholera.

The weather was dry and cold, the mercury ranging from 32° above to 10° below 0; scarcely any rain had fallen since November, 1864, until March, 1865, making, upon the whole, a winter of a uniform temperature, dry and pleasant.

The symptoms of the erysipelatous fever were nearly the same as those of bilious fever. The disease resembles the latter in duration and in its general tendencies. In this disease the secretions are all locked up and the action of the heart greatly accelerated. The functions of the skin, kidneys, liver, and bowels are diminished, while the action of the lungs is increased. The bile being retained, unless proper remedies are used, jaundice sets in. If the action of the kidneys is suspended for any length of time, coma results. The general tendencies of the disease are to induration, inflammation, and suppuration; the disease running a course of from seven to twenty-eight days.

Unlike what is true of bilious fever, inflammation was liable to set in early in the tonsils, pleura, peritoneum, the external muscles of the neck or face; no portion of the body was, indeed, exempt. In some of the cases the inflammation was confined to the skin, but it would frequently extend to the cellular tissue, and occasionally to the muscles also, giving rise to large abscesses. The symptoms were more favourable when it located itself upon the surface.

The question may be asked, how can we determine that a case was one of erysipelatous fever, unless the disease be located? The question, says Dr. M. is easily answered; it is by the quick, frequent pulse, which is often 130 in the minute, and by the acute delirium that sets in at night. In the morning the pulse seldom rose beyond 100°, and the mind would be clear and quiet, but so soon as night came round again the pulse quickened and the delirium returned while the patient sank to a degree seldom observed in any other disease. In some cases death occurred from nervous prostration within forty hours from the beginning of the attack. Ordinarily the disease came on with a sense of chilliness, lassitude, pain of the head, back, and limbs. There was loss of appetite, indisposition to exertion. After from twenty-four to thirty-six hours a severe chill would ensue, with intense thirst, nausea and vomiting, restlessness, and a feeling of great muscular prostration. The tongue was usually dry and coated; the skin hot, pulse strong and frequent; urine high coloured. As the disease progressed, the system became more and more exhausted, until the erysipelas located itself externally, or by its breaking down the crasis of the blood the attack resulted in death.

Females seemed peculiarly predisposed to the disease; but no sex, age, or condition in life was exempt.

When erysipelas attacked the peritoneum, mucous membrane of the stomach,

pleura or meninges of the brain, it terminated, most commonly, fatally. The inflammation had a strong tendency to suppuration. In a large number of cases abscesses occurred about the angle of the jaw, and in many within the substance of the tonsils.

The disease did not seem to be contagious; usually, however, it went through entire families. In several instances it was supposed to have been communicated by innoculation.

The most successful treatment consisted in the administration of alteratives, tonics, stimulants, and anodynes. In general. local applications were useful only as placebos. At the commencement of the attack calomel and jalap, with Dover's powder, were given to clean the intestinal canal, after which tonics were administered—quinia and the tincture of the chloride of iron. About the second or third day of the disease, tartar emetic was found to be an invaluable remedy given in about half grain doses, just enough to produce nausea. It relaxed the system, established the secretions, mitigated the force of the circulation, and aroused the liver to action, better than is done by mercury, while there was no danger of the occurrence of ptyalism, which is especially to be dreaded whenever there is a tendency of the disease to the throat. During the night morphia enough to calm the restlessness and procure sleep was given. Iodide of iron was given as an alterative, but it did not seem to act as beneficially as the tincture of the chloride of iron combined with quinia. The latter Dr. M. considers indispensable as a tonic and antiperiodic. Throughout the day it may be given with good effect, but must be discontinued upon the approach of night. The local application of the tincture of iodine is highly recommended by modern practitioners in the erratic form of erysipelas; after a faithful trial, however, it was found to do little positive good in arresting the spread of the disease from one portion to another of the surface of the body. In the majority of cases, where the face was attacked the disease disappeared, certainly, as soon without the local use of the iodine as with it.

Dr. A. Niles, of Quincy, relates a case of "Puerperal Peritonitis," treated mainly by opiates, with veratrum viride to control the rapid action of the heart. The patient was sick some three weeks, but finally recovered.

During an extensive endemic of puerperal fever which prevailed in Western New York some twenty years ago, finding the antiphlogistic treatment invariably unsuccessful, Dr. N. was induced to try the effects of opium given in conjunction with carbonate of soda; the beneficial effects resulting from this treatment then and subsequently taught him to regard the opiate practice as the one from which the most success is to be anticipated. He commenced with small doses at short intervals, and gradually increased the quantity of the opium until the pain and tenderness were removed, carefully watching, all the while, the effects of the remedy upon the respiration. Large doses, Dr. N. believes to be safe, provided they do not depress the respiration too much.

In a practice of thirty years, Dr. N. has not seen a single case of puerperal peritonitis recover when treated by bleeding, purging, and the other antiphlogistic remedies. Large doses of opium appear to be better borne when combined with quinia. Veratrum viride, when it does not nauseate does good by moderating the circulation. Dr. N., however, prefers digitalis.

The concluding paper, is the report on "Orthopædic Surgery"—using the term in its widest sense, including the prevention and correction of deformities in persons of all ages. The report is by Dr. David Prince, of Jacksonville. It proposes to discuss the nature, causation, and treatment of all deformities, save talipes, which was fully considered in a former report, to the extent of some degree of completeness. The important subjects embraced in the report of Dr. P. are certainly very concisely treated by him, but he has succeeded in presenting a very interesting and highly instructive sketch of the actual condition of orthopædic surgery. The better acquaintance which the practitioners of the present day have acquired of the pathology of the more prominent deformities to which the human body is liable, has enabled them to apply with greater skill the means necessary for their removal—whether internal, or externally, in the form of appropriate apparatus. The efficacy of time, skill, and perseverance in the correction of malformations, is far from being fully estimated by the

community at large; we might say the same of even a large number of the medical profession who have failed to make themselves acquainted with the recent advances that have been made in every department of orthopædic surgery. The report of Dr. P. is a somewhat extended one, occupying eighty-three pages of the volume before us, and yet, so extensive are the subjects discussed in it, that they are presented by him rather in outline than in full detail.

2. The usual opening address of the *Vermont Medical Society*, by the president, was pronounced this year by Dr. O. F. FASSETT. The subject of the address is "The Demands of the People of the last half of the nineteenth century upon the Medical Profession, and the Demands, rightful and legitimate, of the Medical Profession upon the People and the Government especially of this country." Upon this theme Dr. Fassett descants very ably. His views, it is true, can lay but little if any claims to originality, while his manner of enforcing them is somewhat too rhetorical; nevertheless the manly stand he takes in favour of legitimate medicine as a science and an art, and the energy with which he urges the necessity, in order to satisfy the just claims of the community, of an honourable, properly educated, and well trained body of men for its successful practice, save the address from condemnation for want of originality, and for any faults of style of which it may be justly accusable.

The address is followed by a paper from Dr. H. F. STEVENS, on the Statistics of Diphtheria in Vermont. Dr. S. applies the term diphtheria to all local affections of the throat attended by an exudation of a membraniform character. The express meaning which Dr. S. would convey by the words "diseases locally attaching the throat" is not very clear. If he simply means all diseases of the throat, accompanied by membraniform exudation, he would then include as diphtheria all cases of membranous croup and many of scarlatina. He cannot mean, certainly, to inculcate the erroneous doctrine of diphtheria being simply a local disease of the fauces.

In the first Registration Report, namely, that of 1857, seventeen cases of death are ascribed to "disease of throat." Of these cases 8 were males and 9 females; eleven being under 20 years of age. "These," Dr. S. remarks, "were probably cases of diphtheria, as some cases of death are ascribed to quinsy in the report. In this early history of diphtheria in our State, it is more than probable that deaths were returned as occurring from scarlatina, that were really caused by diphtheria." Dr. Allen, in remarking upon the report, says that scarlet fever prevailed very extensively throughout Vermont.

In the report for 1858, diphtheria is for the first time referred to as a cause of disease. Fourteen cases are given—8 males and 6 females. Of these eleven were under 20 years of age. No case of death from throat disease is given. Scarlatina is shown to have been more fatal than it was in 1857. Of 275 deaths reported from scarlatina, eleven per cent. occurred in adults. It is probable that in the returns of the causes of death for 1858, scarlatina and diphtheria were largely confounded.

For the year 1859, sixty-one deaths from diphtheria were reported—26 males and 35 females. Forty-seven of the deaths were in persons under 20 years of age. The reported deaths from scarlatina were very numerous, also, some cases returned as putrid sore throat and malignant sore throat were arranged in the list as diphtheria.

In the year 1860, two hundred and twelve deaths from diphtheria are reported —101 males and 111 females; 195 were persons under 20 years of age. The deaths from scarlatina reported this year were less than one-half of the number reported in either of the previous two years.

In the report for 1861, four hundred and forty-one deaths from diphtheria are recorded. Of this number 220 occurred in males and 221 in females. The compiler of the report for 1861 remarks that diphtheria "does not press with equal force and uniformity on every part of the State—some counties being very slightly visited, towns even being entirely exempt, while in other parts the fatality has been excessive. The largest proportion by far of the deaths were in the young—mainly of children under 10 years of age, though young adults

are frequently its victims. The older classes were by no means entirely exempt." In 1861, one hundred and nine deaths from scarlatina are recorded.

In the report for 1862, the deaths from diphtheria amounted to nearly 18 per cent., of the entire mortality for the year. Eight hundred and eighteen deaths are recorded—374 of males and 444 of females.

"It would be interesting," remarks Dr. S., "to trace out still closer points of similarity as well as of difference of diphtheria with scarlatina and croup, between it and both of which diseases there is claimed to be an alliance, if not in many cases, an identity. It would be satisfactory to determine with certainty whether the disease is or is not dependent upon humidity of the atmosphere, low and wet localities, or miasmatic influences. To demonstrate, if possible, whether in its ravages in our own State it followed any general laws, and if so, the nature of those laws. But the data within our reach are too limited to enable us to ascertain the exact influences which govern these epidemics."

Dr. S. considers that the apparently conclusive facts adduced in support of the contagiousness of diphtheria are quite as strongly met, if not rebutted by the negative evidence advanced by those who deny the contagiousness of the disease.

As to the sequelæ of diphtheria, Dr. S. refers to the persistence of albuminuria, its frequent accompaniment—paralysis, often local, as of the palate and pharynx; sometimes general, occasionally persistent.

Dr. S. does not enter into any examination as to the pathology of diphtheria or of its treatment.

The most interesting fact in connection with the history of diphtheria during its prevalence in Vermont, as shown in the paper before us, is its sudden appearing; its rapidly increased prevalence, augmented malignancy, and continued recurrence year after year. This is not like what takes place in epidemic diseases generally, which very rapidly reach their acme as to severity and spread, and then as rapidly decline in both respects. A few sporadic cases may occur for many years—these, however, are usually widely dispersed and mild in character.

The next paper, by Dr. L. C. Butler, treats of "The physiological properties and therapeutic action of Veratrum Viride." Without wishing to be understood as fully subscribing to all the physiological views and therapeutic expositions set forth by Dr. B. in the article before us, we admit that he has brought forward from his own clinical experience and that of many reliable practitioners, a goodly array of evidence in favour of the value of the veratrum viride as a therapeutic agent in a very extensive list of febrile, inflammatory and nervous diseases. Its action is primarily that of a cardiac and nervous sedative, while, secondarily, it acts as a diaphoretic, diuretic, alterative, expectorant, emetic, and, rarely, as a cathartic.

The diseases in which its employment has been found beneficial are all of a decided inflammatory type. In many of these diseases its use may, some insist, supersede a resort to the lancet. Its effects, as an arterial sedative, are very decided, and are not followed by the reaction which so very generally succeeds the use of the lancet, and they may be kept up for days without any unpleasant consequences. In the pneumonia of children it is reported to be a remedy of peculiar efficacy.

In fevers, whether the type be inflammatory or typhoid, the veratrum viride, when well timed, has been found, we are assured by many reliable practitioners, to be a most valuable adjuvant to the other remedies demanded by the varying circumstances of individual cases.

In scarlatina the veratrum is regarded by some authorities as almost a specific. Under its use, we are assured, the skin becomes moist, the nervous restlessness subdued, the pulse reduced in its momentum, and the affection of the throat and fauces decidedly moderated, and this without any danger of permanent prostration, while, at the same time, the danger of the occurrence of the usual distressing sequelæ of the disease is lessened.

In puerperal fever cases are reported, in which, under the use of the veratrum, the pulse became reduced from 140 to 80, and kept at that rate or even under until the recovery of the patient.

We have statements in evidence of the efficacy of the veratrum in puerperal convulsions, puerperal mania, the convulsions of infants, hysteria, neuralgia, chorea, hæmoptosis, etc. etc.

If the facts now collected concerning veratrum viride as a therapeutic agent be carefully collated, Dr. B. believes that the following general conclusions may be deduced from them, viz:—

"1. The tincture made by macerating for one week eight ounces of the fresh dried root of the veratrum in one pint of alcohol, and the fluid extract of Thayer are the best and most reliable preparations for its administration.

"2. The dose of the tincture is five to ten drops, of the extract two to four drops, varied according to the urgency of the symptoms, and the age and strength of the patient, and repeated at intervals of from one to four hours.

"3. It is not necessary to push the remedy so far as to produce emesis or catharsis. Its full effects are usually reached without either of these results.

"4. Veratrum is essentially an arterial and nervous sedative, whether employed by itself or in combination with other agents.

"5. It is as safe a remedy as any we possess, only requiring the ordinary degree of caution in its employment, and, like the majority of our remedial agents, liable to fail in special cases of peculiar idiosyncrasy or of wrong diagnosis.

"6. It is equally applicable in the treatment of low forms of fever, and those of an inflammatory type. In the former it is to be preferred to the lancet, and relieves without depriving the patient of the vital fluid, while in the latter the better its remedial properties are understood the less frequently will the lancet be employed."

"A case of dropsy" is related by Dr. LEMUEL RICHMOND, the only interesting feature of which is the frequency with which paracentesis was performed, at short intervals, and the large quantity of fluid drawn off by the operation. From the 23d of April, 1853, to October 6, 1854, the amount of fluid drawn from the abdomen of the patient reached 2330 pounds. After an operation performed on the 29th of July, the opening did not close, and a constant discharge of fluid occurred for nine days. A renewal of the operation was not demanded until the ensuing 16th of August. During the interval it is supposed that fifty-three pounds of fluid were discharged, making the entire amount lost during seventeen months and twelve days 2383 pounds, and this in sixty operations, being on a an average of about thirty-five pounds each operation.

Notwithstanding the extent and rapidity of the serous effusion in this case, excessive thirst was experienced for only a short period.

A post-mortem examination, we are told, revealed an omental cake (?) from which a broad band extended to the fundus uteri to which it was attached.

On "Criminal Abortion," by Dr. Wm. McCollom. Dr. McC. exhibits a just spirit in his earnest and pointed reprobation of this crime against nature and humanity, equally condemned by the laws of God and of man. Unfortunately, from an entire ignorance of the reprehensible nature of the act, and the injury to health inflicted by it upon the female constitution, entailing always more or less severe and protracted, often permanent, suffering, occasionally even a prompt destruction of life, it has been gradually on the increase in our midst, not merely in cases in which it is prompted by the desire to conceal the effects of an illicit sexual intercourse, but by married women, to rid themselves of the care and responsibilities of maternity. But mere denunciation, mere discussion of the physical evils resulting from the induction of abortion in professional publications is not calculated to put a stop to the practice. Dr. McC. presents no suggestion as to any efficient means for its prevention.

Dr. B. F. KETCHUM presents a very excellent account of "cerebro-spinal meningitis" as it prevailed epidemically along the valley of the Connecticut River. The usual symptoms were chill, severe pain of head, nape of neck, and occasionally extending down the spine, sometimes confined to one joint, usually that of the ankle; vomiting, partial coma or delirium, opisthotonos, deafness, dilated pupil, feeble pulse, pinched countenance, mottled appearance of surface from ecchymoses, varying in size in different cases, or from a retarded condition of the capillary circulation of the skin; surface cool in the early stage, followed by reaction, increased heat, full and excited pulse, active delirium; still later in

the disease there was partial delirium, feeble frequent pulse, dilated pupil, with decided opisthotonos. The tongue was usually moist, slightly coated, no sordes on teeth, no disturbance of bowels. The unusual symptoms were epistaxis and congestion of lungs or brain. In several cases there was such a spasmodic action of the muscles of the jaws as to cause a fracture of a tooth.

In the favourable cases vomiting ceased, consciousness returned, the ecchymoses disappeared, the circulation became more equalized, and a free perspiration occurred.

The youngest patient was four years of age, the eldest forty. All the patients excepting two were males, being in the proportion of one female to fourteen males of those attacked.

The duration of the disease depended upon the severity of the attack, the stage of the disease at which the treatment was commenced, and the nature of the treatment. Some patients lived five or six weeks from the date of attack, and died from congestion of the brain. In most of the patients who recovered improvement occurred within forty-eight hours, and convalescence set in within a few days. In other cases reaction never occurred, and three or four died within from twelve to forty-eight hours from the attack, with a complete depression of the nervous system, and cessation of action in the vital organs. No relapses or second attacks were known to have occurred.

From Dr. K.'s experience he concludes that the disease was not contagious, nor capable of being conveyed from one person to another.

The sequelæ were deafness and impairment of intellect, of shorter or longer duration.

Dr. K. has tried all plans of treatment, diffusible stimulants, quinia in all sized doses, alteratives, hot and steam baths, all forms of counter irritation, and bleeding. Venesection practised early in the attack, the blood being taken from a large opening in a full stream so as to relieve promptly the congestion of the nervous centres, Dr. K. found to be the only treatment to be relied on. At a later period of the disease venesection was injurious. Death was preceded by congestion of the brain. A few who died shortly after the commencement of the attack appeared to succumb to paralysis of the heart, or to one form of asthenia.

The post-mortem appearances varied somewhat according to the stage of the disease at which death took place. In all cases there was congestion of the vessels of the meninges and surface of the brain and of the spinal marrow. In those who survived the attack a few days there was also inflammation of the arachnoid with its results, viz., exudation of lymph and in one case suppuration. When death took place still later, the effusion was considerable. In the cases of rapid death the cavities of the heart were invariably filled with blood; when death took place at a later period the heart had an anæmic appearance. In several cases there was more or less congestion of the lungs.

After a short memoir of Dr. N. W. Fairchild, a deceased member of the Vermont Medical Society, by Dr. H. F. Stevens, there follows a paper on "Morbus Coxarius," by Dr. Benjamin Fairchild. The remarks of the author in reference to this serious and unfortunately too frequent disease of childhood, youth, and early manhood have little of novelty to press them upon our notice, nor is the plan of treatment one the results of which are of such a character as to demand for it a favourable reception.

The concluding article in the present volume of *Transactions* comprises several tables exhibiting the number and ratio of those exempted from military service under the drafts of 1863–64, in each district of the State of Vermont, in the whole State, and in the United States. The average measurement of chest, the average height and ages of the men examined in the United States under the draft of 1864, and in the several districts of Vermont, save the first.

The number of men examined under the draft of 1863 was, for the United States 255,188, for Vermont 6,719. The number exempted from military duty, in consequence of physical and mental disability, was, for the United States, 80,138, or a ratio per 1000 of 314.02, for Vermont 2,187, or a ration per 1000 of 324.89

The number of men examined under the draft of 1864 was, in the United

States, 61,333. The number exempted for the United States was 15,789, a ratio per thousand of 257.02. The number examined in Vermont was 273, of which number 93 were exempted, being a ratio per thousand of 340.76.

3. The address of the president of the *Indiana State Medical Society*, Dr. M. H. Harding, had for its theme "The Effects of Climate and Temperature upon Health and National Character." The questions involved in the inquiry as to the climatic influences exerted upon the health and national characteristics of the human being, important as they are to the physician, are equally so to those not of the medical profession. The entire subject is one of vast extent, and requires for its proper elucidation a much larger amount of well attested and properly collated facts than we now possess. So far as it is touched upon by Dr. H., and nothing more can be expected in a discourse like that before us, considering the magnitude of the subject and the limited time to which the speaker is necessarily limited—the views he has expressed in relation to climatic influence are in the main correct. No new facts, however, are elicited, nor are the facts already adduced made use of for the establishment of any novel or more plausible theory of the influence of climate than that now commonly received.

Dr. V. Kersey presents a paper on "Cholagogues and the indications for their use." Without crediting Dr. K. with any very great amount of originality of views in respect to the subjects discussed by him, we find his teachings in relation to the physiology of the liver, the general results of a deficient secretion of bile, and the therapeutic agents by which its secretion may be promoted, accord very nearly with those taught by recent authorities. The paper deserves a careful perusal. We have even among physicians, from whom we should expect more exact language, much talk respecting bilious conditions and diseases, and the remedies demanded for their removal: and yet, we are well convinced that a more exact acquaintance with the physiology of the liver, with the true pathology of the morbid phenomena to which the term bilious is applied, and the true action of the leading antibilious remedies, would somewhat modify their practice in the so-called bilious affections, while their patients would be saved from the infliction upon them of not a little mischief.

"Thoughts on Asiatic Cholera, its Mode of Propagation and Proper Treatment." By Dr. L. R. Johnson. "Cholera." By Dr. W. Y. Harvey. "The Pathology and Treatment of Cholera." By Dr. R. E. Haughton. These three papers on cholera, which occupy altogether some twenty-one pages, may be dismissed with a very few words of comment. They are calculated to throw but little if any new light upon the history, pathology, or therapeutics of what is known to us as Asiatic or epidemic cholera. They comprise a few familiar facts, loosely stated, and many statements without a sufficient series of observations, or of statistics to establish their accuracy or to show their direct relationship with the conclusions they are supposed to favour.

Dr. Johnson maintains that cholera is contagious, being communicable by contact with the sick or through the medium of the choleraic excretions. Filth and a stagnant atmosphere may, he admits, act as predisposing and intensifying causes of the disease; though its inroads have by no means been confined to filthy localities. He believes these have less to do with the spread of cholera than the density of the population, and the frequency of large crowded assemblages. Equally certain is it, Dr. J. asserts, that the idea that cholera is in any way dependent on the condition of the atmosphere as to temperature, moisture, or electrical changes is erroneous; he considers that these atmospherical conditions have little to do with the prevalence or severity of the disease.

Dr. Harvey ranges disturbed electrical conditions, atmospheric heat and moisture among the causes of cholera. He considers the disease to be neither contagious nor infectious, but simply epidemic; hence he concludes that no more reason exists for running away from cholera than from a common cold. Those who are most with the disease, he remarks, and fear it least fare the best.

Dr. H. presents a very novel, but, we may add, entirely untenable theory in explanation of the production of the choleraic poison.

The pathology of cholera taught by Dr. Haughton, though defective, appears

to us to be the most plausible; the most in accordance with the characteristic features of the disease; the succession of the morbid phenomena from the commencement to the close of the attack, and with well attested physiologico-pathological facts.

On "The Radical Treatment of Inguinal Hernia." By Dr. James Thompson. The radical treatment proposed by Dr. T. consists in the induction of adhesive inflammation in and around the inguinal canal by an operation devised by himself. Seven cases of inguinal hernia were operated on according to the plan suggested by Dr. T.; five were cured. In one case failure was due to the breaking of a part of the instrument on the fourth day, submission to any future treatment being refused. In another case death was the result of aneurism. For a description of the operation, and of the instruments used, the reader is referred to Dr. T.'s paper.

In the same paper Dr. T. relates "a case of epilepsy cured by trephining." Thomas Jefferson, private 4th U. S. artillery, aged forty-two years, eight years prior to enlistment was struck on the head, and a fracture was induced near the mastoid process of the temporal bone. His statement was that he was "knocked dead" for some time, and was unable to work for three months, when he had "a fit;" after about eight days a second; subsequently he had a fit every month, preceded by a sickening epigastric pain and drowsiness. In October, 1864, he applied for a discharge from the army. In the latter part of February, 1865, during a true epileptic convulsion, Dr. T. trephined the patient directly over the fracture. A spicula of bone found pressing upon the dura mater was removed. The wound was closed with silk suture, and cold water dressing applied. On the third day after the operation there was an attack of delirium caused by the patient drinking an ounce of whiskey. A few ounces of blood were taken from the arm which was followed in a few hours by a state of calm. A dose of sulph. magnesia was given him. He took nitrate of silver during two months. The scalp healed in eight weeks. October 2, 1865, the patient had been already several months on duty, having had no return of the disease since he was trephined.

A very sensible article on "Excision of Bone" is by Dr. J. A. Comingore. From a very careful perusal of it the surgeon, whether in the army or in civil practice, will derive no little instruction. That by excision even of the larger joints, but especially along the shaft of the long bones, in cases in which formerly amputation of the entire limb, or at least of a portion of it, was considered imperative in order to save the patient's life, useful limbs may be preserved, without any additional peril of life to the patient, is now placed beyond the possibility of doubt. All that is got to be learned is, what are the cases in which, and what the circumstances under which excision may be performed with a fair prospect of success, and in what cases, and under what circumstances will it be improper to attempt it. The recent experience of surgeons, both at home and abroad, render it very probable that the operation of excision is applicable to a much larger list of cases than it has yet been applied to.

The next paper is by Dr. T. Parvin, and is entitled "Vaginal Fistules; a few words upon their Etiology, and upon some of the Past and Present Methods of Treatment." This is a brief but very neatly drawn up monograph which, though containing nothing absolutely new, may be read with interest. Compilations, we may remark, however well prepared, do not seem to us to be exactly the class of papers which are best suited for the Transactions of our State or National Medical organizations.

This last remark may, with equal propriety, be applied to the next paper, on "Human Entozoa." By Dr. W. B. Fletcher. One word of apology may, it is true, be offered for the preparation of the paper of Dr. F., which is, that reliable accounts of the results of recent researches in respect to the subject treated of by the former, are not so readily attainable by physicians generally; and yet, to every member of the medical profession all that relates to human entozoa —the circumstances connected with their generation, their nutrition, and their metamorphoses—is of no trifling importance.

The present volume of Transactions closes with a very rapid outline of "The

Progress of Medical Science," from the times of Hippocrates to the present day, by Dr. H. C. Cole. When we state that the entire report occupies only about two pages, the outline it presents must, it is evident, be only a very faint one.

D. F. C.

ART. XXI.—*Reports of American Hospitals for the Insane:—*

1. *Of the State Asylum, at Trenton, N. J., for the year* 1865.
2. *Of the Mount Hope Institution, for the year* 1865.
3. *Of the Central Ohio Asylum, for the fiscal year* 1864–65.
4. *Of the Southern Ohio Asylum, for the fiscal year* 1864–65.
5. *Of the Longview Asylum, for the fiscal year* 1864–65.
6. *Of the Indiana Hospital, for the fiscal year* 1864–65.
7. *Of the Iowa Hospital, for the fiscal year* 1864–65.
8. *Of the New Hampshire Asylum, for the fiscal year* 1864–65.
9. *Of the New York City Asylum, for the year* 1865.
10. *Of the Asylum for Insane Convicts, Auburn, N. Y., for the fiscal year* 1864–65.

1. AT the present time, when, as we believe, the true interests of the insane of our country are at stake, it is "devoutly to be wished" that in every State the following language of Dr. Buttolph, in his report for the hospital at Trenton, for the year 1865, were strictly applicable:—

"I may say with pleasure and pride," remarks the doctor, "in behalf of the authorities and people of the State, that they seem entirely willing, and even anxious, to provide ample accommodation, *in the institution*, for the care and treatment of *all who are insane, whether they be regarded as curable or otherwise.*"

	Men.	Women.	Total.
Patients in hospital January 1, 1865 . . .	148	185	333
Admitted in course of the fiscal year . . .	98	98	196
Whole number	246	283	529
Discharged, including deaths	72	90	162
Remaining Dec. 31, 1865	174	193	367
Of the discharged there were cured . . .	32	40	72
Died	17	14	31

"Death occurred in 10 cases from general exhaustion; in 2 from congestion of the lungs; in 3 from exhaustion of acute mania; in 6 from consumption; in 3 from epilepsy; in 1 from erysipelas of the head; in 1 from apoplexy; in 1 from delirium tremens; in 2 from general paralysis; in 1 from disease of the heart, and in 1 from suffocation arising from disease of the throat and neck, internal and external."

The aerated or unfermented bread has been used "with great satisfaction" at this hospital, throughout the year.

The demand for accommodations had so increased that the State legislature had authorized an extension of the building; and it had been determined to erect six wings or "sections," three at either extremity of the present edifice. The three will be placed upon as many sides of a square, the fourth side to be occupied by a fence, thus forming a convenient airing court for the most disordered patients. These buildings, some of them begun, will, when completed, accommodate two hundred persons, making the proper capacity of the hospital five hundred.

2. The physician's report, for 1865, of the *Mount Hope Institution*, is preceded by an essay entitled, "*The late Trial for Conspiracy, of the Physician and Sister Superior of the Institution, before the Circuit Court of Baltimore County; its Psychological Aspect.*" From this account it appears evident that the trial mentioned was instigated by one of those profoundly disordered, but

yet, in some respects, shrewd, cunning, "smart," and active minds which, at various times and places, have annoyed their relatives and friends and tormented the officers of the hospitals for the insane. We have no room even for a brief compend of the essay, and must refer the reader to itself if he wishes to obtain a knowledge of "the merits of the case."

The trial obtained a wide notoriety, and awakened, for the defendants, the anxious sympathy of the officers of other hospitals. Their triumphant vindication before the court, as demonstrated in the verdict of "not guilty," is an evidence that the tribunals of the law can sometimes, if not always, discriminate between soundness of mind and that form of insanity in which there is "method in madness."

	Men.	Women.	Total.
Patients at the beginning of the year	110	116	226
Admitted in course of the year	175	64	239
Whole number	285	180	465
Discharged, including deaths	177	61	238
Remaining at the end of the year	110	117	227
Of the discharged, there were cured	29	26	55
Died	11	8	19

Deaths from pulmonary consumption, 5; apoplexy, 4; chronic dysentery, 2; typhomania, 2; softening of the brain, 2; pneumonia, epilepsy, mania, and old age, 1 each.

Besides the above-mentioned patients, there were, in the course of the year, 132 cases of mania-à-potu in the hospital—at the beginning of the year, 4; admitted, 128; discharged cured, 127; died, 4; remaining at the end of the year, 1.

"The *abuse of opium*," remarks Dr. Stokes, "is recorded as the cause of insanity in seven cases. We have good reason for believing that this most destructive habit is on the increase. The injurious influence of the practice on many constitutions is much more serious than is commonly supposed. It not unfrequently proves the cause of exceedingly troublesome and obscure nervous affections which cannot be cured whilst its use is persisted in. But it is astonishing to what enormous doses of this drug the system may become habituated. One of our patients had become accustomed, as his daily allowance, to the consumption of 156 grains of solid gum opium. In about three months the habit was abandoned without any serious consequences."

3. The report of the *Central Ohio Lunatic Asylum*, for the official year ending with the 31st of October, 1865, is signed by Dr. William L. Peck, who succeeded Dr. Hills, as Superintendent.

	Men.	Women.	Total.
Patients at the beginning of the year	124	141	265
Admitted in course of the year	90	98	188
Whole number	214	239	453
Discharged, including deaths	80	94	174
Remaining at the end of the year	134	145	279
Of the discharged there were cured	37	40	77
Died	11	16	27

Deaths from exhaustion of acute mania, 5; typhomania, 1; organic lesions of the brain, 3; general paralysis, 4; epilepsy, 1; exhaustion and general decay, 1; inanition, 2; consumption, 6; inflammation of the lungs, 1; caries of the vertebræ, 1; suicide, 3—a total of 28, or one more than above stated.

The report contains a mass of tabulated numerical statistics, but absolutely nothing further in regard to insanity or its medical treatment. Dr. Peck leaves the tables to "speak for themselves," and has "no favourite theories to discuss, or hobbies to parade for inspection."

Extensive repairs of the buildings were made in the course of the year.

Over, 1,200 gallons of the syrup of "Sorgho" was consumed. The plant is raised to some extent on the hospital farm. Dr. Peck proposes to extend its

cultivation, and to manufacture the syrup, believing that the institution may be wholly supplied from its own premises.

4. The report of the *Southern Ohio Lunatic Asylum*, for the official year ending with the 31st of October, 1865, contains the statistics not of that period alone but for the first ten years of the operations of the hospital.

	Men.	Women.	Total.
Patients at the beginning of the year	72	90	162
Admitted in course of the year	43	52	95
Whole number	115	142	257
Discharged, including deaths	38	48	86
Remaining at the end of the year	77	94	171
Of the discharged there were cured	22	31	53
Died	6	6	12

Deaths from mania, 4; consumption, 3; paralysis, apoplexy, dysentery, disease of heart, and disease of kidney, 1 each.

	Men.	Women.	Total.
Patients admitted from Sept. 1, 1855, to Oct. 31, 1865	578	596	1,174
Discharged cured	311	307	618
Died	74	49	123
Insanity attributed to "war excitement"	7	9	16
Between 20 and 30 years of age when admitted	201	202	403
" 30 and 40 " "	149	150	299
Single	289	174	463
Married	259	357	616
"Widowed"	30	65	95
Natives of Ohio	250	230	480
Natives of other countries than the United States	162	196	358

Of 896 cases of less duration than one year, 544, or 60.71 per ct. were cured.
Of 239 " of greater " " " " 57, or 23 " " "

The reason of the large percentage of cures at this hospital, as well as at the other State institutions in Ohio, is, that it is their established policy to discharge cases supposed to be incurable, for the purpose of admitting such as are believed to be curable. The patients thus discharged "drift," according to Dr. Gundry, "into the various infirmaries, or (where these do not exist), the jails of the counties of which they were residents." The doctor condemns this course "except as a temporary measure, and in itself the lesser (less?) of two great evils." In discussing the methods by which it may be obviated, he passes in review the scheme of separate establishments for the chronic insane, and stamps it with the seal of condemnation. The method which he approves is "the provision for the care and treatment of the insane of both classes (the recent and the chronic) alike, by keeping pace with the increase of the insane by the increased accommodations provided for their treatment."

5. The report of the *Longview Asylum* (Hamilton Co., Ohio), for the fiscal year ending October 31, 1865, furnishes the subjoined statistics.

	Men.	Women.	Total.
Patients at the beginning of the year	175	192	397
Admitted in course of the year	73	90	163
Whole number	248	282	530
Discharged, including deaths	65	89	154
Remaining, Dec. 31	183	173	376
Of those discharged, there were cured	35	55	90
Died	17	13	30

Died of phthisis pulmonalis, 8; general paralysis, 5; epilepsy, 4; typhoid

pneumonia, 3; gastro-enteritis, 3; maniacal exhaustion, 3; marasmus, 2; apoplexy, 1; suicide, 1.

In regard to the late civil war as a generator of mental disorder, Dr. Langdon says: "Very few cases coming under our care could be attributed to such cause. On the contrary, indeed, it is the almost uniform testimony of physicians in general practice, that during all the four years of our dreadful conflict diseases of the nervous system were less prevalent than before. It was believed that when the war should end and the sustaining excitement had passed away, people would reflect more profoundly upon the calamities that had fallen upon the nation, and more especially upon themselves in the loss of relatives, friends, and property, and that then there would come more grief, despondency, insanity. This, however, so far as we can perceive, is not being justified by the facts.

"That some have been made insane by the distresses and accidents of war is undoubtedly true, but the increase in the number of our inmates is owing, in the main, to the operation of more common causes. Prominent among these I feel it a duty to refer, in an especial manner, to the intemperate use of alcoholic stimulants. Of 1,181 patients received here, 145 were insane from this cause alone. This bad influence of a bad habit was particularly manifest during and more immediately subsequent to the rebellion, and gives additional confirmation to what has been observed in the history of all civilized nations, namely, that when any great calamity, whether of war, famine, pestilence, or monetary crisis, falls upon a people, they in large numbers take either to praying or to drinking."

6. The report of the *Indiana Hospital for the Insane*, for the official year ending with the 31st of October, 1865, is signed by Dr. Wilson Lockhart, as Superintendent. We are not informed of the time at which he assumed the duties of the office, or of that of the resignation of his predecessor, Dr. Woodburn.

	Men.	Women.	Total.
Patients at the beginning of the year . .	140	144	284
Admitted in course of the year	100	89	189
Whole number	240	233	473
Discharged, including deaths	114	97	211
Remaining at the end of the year . . .	127	135	262
Of the discharged, there were cured . . .	58	49	107
Died	13	5	18

Died of exhaustion from acute mania, 3; apoplexy, 4; general paralysis, 1; marasmus, 4; acute dysentery, 3; pulmonary consumption, 2; pneumonia, 1.

This report is brief, and almost wholly devoted to the condition, the needs, and the recent improvements of the buildings.

7. The reports of the *Iowa Hospital for the Insane* are biennial, but owing to a recent change of the Statute law the one now before us embraces a period of but twenty-three months, ending with the close of October, 1865.

On the first of the month just mentioned, Dr. Patterson retired from the superintendence of the hospital, and was succeeded by Dr. Mark Ranney, for many years an assistant physician at the Butler Hospital and the McLean Asylum.

The report of the trustees bestows the highest encomiums upon Dr. Patterson. His successor, from his ability and long experience, is well qualified to fill the place.

	Men.	Women.	Total.
Patients in hospital December 1, 1863 . .	117	99	216
Admitted in 23 months	127	142	269
Whole number	244	241	485
Discharged, including deaths	98	103	201
Remaining October 30, 1865	146	138	284
Of the discharged there were cured . . .	19	31	50
Died	27	28	55

Died of exhaustion from chronic insanity, 4; acute mania, 3; diarrhœa and

dysentery, 15; consumption, 9; epilepsy, 10; general paralysis, 4; erysipelas, 4; apoplexy, 2; softening of the brain, abscess of the lungs, peritonitis, and diabetes, 1 each.

"The large mortality from diarrhœa and dysentery—our great foes," remarks Dr. Ranney, "should engage attention and lead to measures to prevent or diminish it, if possible. That something can be done in this direction I feel sure; and strong reasons exist why there should be no delay. In the production of these disorders much is due, undoubtedly, to the imperfect construction of sewers and air-ducts."

"The weekly, social, and other entertainments have been kept up with great regularity, and are a source of incalculable benefit to the household. They are looked forward to with earnest interest; any interruption is felt to be a great deprivation."

"Of the forty cases (of epilepsy) now in the hospital, not one came under treatment until three or four years had elapsed from the period of first attack."

8. The numerical results of the official year 1864–65, at the *New Hampshire Asylum for the Insane*, are as follows:—

	Men.	Women.	Total.
Patients in hospital, May 1, 1864 . . .	103	114	217
Admitted in course of the year	59	48	107
Whole number	162	162	324
Discharged, including deaths	59	42	102[1]
Remaining, May 1, 1865	103	120	223
Of the discharged, there were cured . . .	19	23	42
Died	17	5	22

Deaths from tubercular consumption, 5; exhaustion of acute mania, 6; apoplexy, 3; chronic insanity, 2; old age, 2; chronic diarrhœa, general paralysis, dysentery, and epilepsy, 1 each.

Dr. Bancroft very justly says: "The usefulness of an asylum is not measured by the number of those who have hopes of recovery, for the large class who are beyond the possibility of restoration are in such conditions as to render residence at the asylum, with its better means of care and management, very desirable, if not wholly indispensable, to the well-being of the individual.

"The numerical statement of a year's operations is soon made, and gives but a meagre skeleton of its real labours. No adequate idea of these can be gained except by a personal observation of the demands to be provided for; innumerable in variety, springing from many morbid conditions, mental and bodily, presented in any considerable number of insane persons.

"To answer these demands by the use of appropriate restorative influences, wherever in the scale the lesion may be, from the simplest physical disturbance up to a derangement of the highest moral forces, this is the work which crowds the hours, but admits of only a very imperfect written record. The only material for a just record of these labours could be found in the personal impressions now incorporated in the lives of those on whom they have been bestowed."

9. The report of Dr. Ralph L. Parsons, successor of Dr. Ranney as Physician to the *New York City Lunatic Asylum*, opens with a history of an endemic typhus fever which was raging at the beginning of the year 1865, the time of the last preceding report. Patients attacked with the fever had already been removed to the fever hospital. In the course of the first four months of the year covered by the report, *seventy-seven* additional cases were similarly transferred. *Thirty-one* of them died.

This was one of the most remarkable instances of scourging disease, whether endemic or epidemic, that have occurred in our hospitals for the insane. Dr. Ranney, the physician, Dr. Marvin, one of the assistant physicians, and two female attendants, were among its victims. The source of the disease was believed to be contagion, although it is not known by whom it was introduced.

[1] So given, in words, in the report; but it should be 101 to correspond with the other numbers.

Among the influences favourable to its development, the report mentions a "greatly overcrowded" hospital, deficiency of clothing and personal cleanliness, and defective water-closets and sewers.

	Men.	Women.	Total.
Patients in hospital, January 1, 1865 . .	261	498	759
Admitted in course of the year . . .	208	317	525
Whole number	469	815	1284
Discharged, including deaths	246	302	548
Remaining, December 31, 1865	223	513	736
Of the discharged there were cured . . .			192
Died	66	61	127

Deaths from asthenia, 21; phthisis pulmonalis, 17; *paralysie générale*, 16; exhaustion from mania, 14; epilepsy, 10; chronic diarrhœa, 6; scorbutic cachexy, 5; old age, 5; dysentery, 4; typhomania, 3; congestion of brain, 2; pleuro-pneumonia, 2; paralysis, 2; albuminuria, 2; suicide, 2; and one each from sixteen other diseases. These deaths do not include those by typhus fever above mentioned.

Among other improvements of the year was the erection of two pavilions, each sufficient for the accommodation of eighty patients. The crowded halls were thus partially relieved. But still, as ever heretofore, the number of apartments is inadequate to the preservation of the health of so large a number of inmates. "Toward the close of the winter, and in the spring of the year," says Dr. Parsons, "many of the patients suffer from scorbutus, and some of them die of this disease. Now, the same causes that produce scorbutus in some patients must act as depressants to others, thus diminishing the probabilities of their recovery. This is the more to be deprecated as the general tendency in the insane is to depression, with an enfeebled circulation, impaired nutrition, and imperfect innervation; hence they require sufficient warmth and a varied and nutritious diet. Neither of these conditions has heretofore been perfectly fulfilled."

10. At the *State Asylum for Insane Convicts*, at Auburn, N. Y., in the course of the official year ending with the close of September, 1865, nine patients were admitted, four of them from the State prison at Auburn, three from that at Clinton, and five from that at Sing Sing. These, with 71 at the beginning of the year, made the whole number 80. Three were discharged "well," one "much improved," and three by death. Remaining, September 30, 1865, 73.

"We have had no epidemical diseases," says Dr. Van Anden, "and can congratulate ourselves on a strict immunity from all maladies of a malignant character. * * * A majority of our inmates have evidently laboured under mental derangement for periods extending back further than the dates of their convictions. The proportion of demented cases is very great. * * * Many of our patients, however, are materially improved from time to time, and nearly all of them made more comfortable than they have ever been before.

"It not unfrequently happens that persons confined in our county jails for misdemeanors and crimes, are discovered to be labouring under mental disabilities amounting to incipient mania, dementia, or some other form of cerebral disease, and for whom no plea of unsoundness of mind is ever set up, or any defence offered on the ground of their irresponsibility. Oftentimes they are tried with little formality, and condemned to prisons, where, after a considerable period of time, they are found to be of unsound mind, and at last are brought under treatment when the favourable period for their improvement is past."

This testimony is not remarkably consistent with the popular cry of the too frequent resort to the plea of insanity as a shield against punishment for crime.

P. E.

ART. XXII.—*Recent Works on Cholera.*

1. *Cholera in its Home. With a Sketch of the Pathology and Treatment of the Disease.* By JOHN MACPHERSON, M.D., late Deputy Inspector-General of Hospitals H. M. Bengal Army, and formerly of the European General Hospital, Calcutta, &c. &c. Small 8vo. pp. 155. London: John Churchill & Sons. 1866.
2. *Cholera: Facts and Conclusions as to its Nature, Prevention, and Treatment.* By HENRY HARTSHORNE, A. M., M. D., Professor of Hygiene in the Auxiliary Faculty of Medicine Univ. Penn. 12mo. pp. 79. Philadelphia: J. B. Lippincott & Co. 1866.
3. *Epidemic Cholera: Its Pathology and Treatment.* By A. B. PALMER, M.D., Prof. Pathol., the Pract. Med. and of Hygiene in Univ. of Michigan, &c. &c. 8vo. pp. 33. Detroit: 1866.
4. *Cholera: Its Characteristics, History, Treatment, Geographical Distribution of Different Epidemics, Suitable Sanitary Preventions, &c.* Illustrated with Lithographic Maps and Microscopic Drawings. Reprinted with Additions from the "Cincinnati Journal of Medicine." By WILLIAM B. FLETCHER, M.D. Cincinnati: 1866.
5. *A Communication from the City Physician on Asiatic Cholera. Is it a contagious disease?* 8vo. pp. 41, with two maps. Boston: 1866.
6. *Memoranda on Asiatic Cholera, its Mode of Spreading, and its Prevention.* By WILLIAM BUDD, M.D., &c. 8vo. pp. 21. Bristol: 1865.
7. *Brief Remarks on Cholera: being the result of observations during the two last outbreaks of Cholera in England and an attempt to advance a theory of that disease which shall lead to a more consistent method of treatment, &c.* By ROBERT J. SPITTA, M.D. London: 1866.
8. *Cholera; its Nature, Cause, and Treatment Simply, Scientifically, and Practically Explained.* By C. SEARLE, M.D., formerly of H. E. I. C. Madras Establishment. 8vo. pp. 8. London: 1866.

1. THE little volume of Dr. Macpherson is one of the most sensible and clever of the publications which the present outbreak of cholera has called forth. The author treats in separate sections of the etiology, pathology, treatment, and prophylaxis of the pestilence. Under the head of etiology we have embraced in five chapters a brief history of cholera, with a sketch of the atmospheric and other influences which are supposed to favour its outbreak and extension, and of the different theories which have been advanced to explain its diffusion; and the author comes to the sensible conclusion that "the time has not yet arrived when we can accept any exclusive theory, whether based on special views of the nature of cholera poison and its mode of diffusion, on contagion or on malaria."

In the three chapters devoted to the pathology of the disease the author describes in the first the symptoms of the disease and the morbid appearances; in the second he gives a survey of some affections which have points of resemblance with cholera, and in the third a sketch of the opinions which have been advanced in regard to its pathology. The author seems not to have arrived at any very definite conclusions on the last subject. He says: "We are after all brought back very much to the views of Rochoux and the Bombay Medical Board. We do not doubt the existence of a blood-poison, but as we do not know its nature (very possibly it may be a ferment, some nitrogenous organized body), so we cannot yet talk with precision of its *modus operandi;* and the assumption that there is a poison present does not necessarily tie us down to accepting only one method of its operation, nor to regard vomiting and purging necessarily as efforts of nature to eliminate a poison."

In the section on Treatment, the author discusses in separate chapters, first the various theories of treatment, second, the various remedies which have been employed, third, the classes of remedies, and fourth, the measures which he considers advisable in the different stages of the disease.

"The treatment of premonitory," Dr. M. says, "is essentially the same as that of ordinary diarrhœa, only that as a matter of precaution it is always wise

to add opium to our medicines. The old Indian pill of one grain of opium, with two of assafœtida may be given at once; or two grains of sugar of lead, with one grain of opium, or ten grains of Dover's powder, and repeated if necessary in a couple of hours, or an equivalent amount of laudanum in brandy or in aromatic water, or in common chalk mixture, will answer as well. The patient should lie down and keep himself warm, using bland diluent drinks, avoiding solid food; hot fomentations or warm cataplasms to the abdomen may prove soothing; and astringent or opiate enemata are often useful; should there be a tendency to colic, turpentine stupes or sinapisms to the abdomen may be required, and chlorodyne or mixtures akin to it relieve the pain. By such treatment the diarrhœa is usually checked, and the patient often saved from an attack of cholera. Of course all diarrhœa in cholera times is not necessarily that disease in its incipient stage.

"If there be the faintest suspicion of cholera I cannot recommend the employment even of mild emetics or aperients."

If the premonitory diarrhœa continue unchecked, and "the bilious discharges of diarrhœa are turning into the enormous rice-water evacuations of cholera, and vomiting has been superadded, and the circulation begins to fail, and cramps are very distressing," opium Dr. M. regards as "still our chief remedy for a time; and if it is to have a chance of acting, it should be presented in a fluid state. I prefer small doses of laudanum to any pills. Pills of one grain of opium, or of one grain of opium and five of calomel, are often given, but are speedily rejected or pass away. Of course a great portion of the laudanum is also rejected; and the practitioner, who must not be absent, must endeavour to estimate how much may have been retained. Small repeated doses of chloroform sometimes seem to quiet the stomach and relieve the cramps. Inhalations of chloroform often give temporary relief; small doses of calomel are sometimes retained, and if not given to meet any very certain indication at the time, may at a later period be supposed to aid the secretion of bile. Chalk powder, magnesia, or bismuth given in full doses may help to check the irritability of the stomach and the profusion of the discharges. At all events they are innocuous. I would apply the same remark to sugar of lead, or to vegetable astringents, if they can be retained. Injections of cold water into the rectum are said to have proved soothing; and I have sometimes thought injections containing sugar of lead or nitrate of silver beneficial. Stimulants are here of use to endeavour to assist the circulation: both alcohol in its various forms and diffusible stimuli. Small quantities of brandy-and-water-punch, much employed in former days in France, or small quantities of beer, which has lately been a favourite, may all be tried, as may suit the feelings of the patient or the circumstances of the case. Champagne is sometimes, for a time, grateful to the patient. Of diffusible stimulants, ether and ammonia are the most convenient, especially the latter; small doses of tincture of camphor or of turpentine I have sometimes thought useful. At this stage it is needless to attempt to load the stomach with food that cannot be retained. Small quantities of iced water, and pieces of ice allowed to melt in the mouth, have a much better chance of being retained than too copious draughts of water. The patient prefers cold to hot drinks, although the ancient elimination treatment prescribed warm ones. The patient complains of want of fresh air; and it is important that he should have plenty of air about him. I do not know that currents of hot air, inhalations of oxygen or other gases, or of moist air have ever been of any use. Meantime, every effort should be made by external applications to aid the capillary circulation and help to relieve the cramps. Frictions with turpentine and oil, or with dry ginger powder, or with cajeputi oil—as was once popular—all come under this head; as does the application of bottles of hot water or hot water tins, or bags of bran or hot fomentations. But the patient will not usually allow anything to be applied long, and in his excessive restlessness cannot bear even the ordinary coverings of a bed. The application of a hot-air bath was one of the earliest Indian remedies, and, although it could be used without disturbing the patient much, was of little use. Hot baths have sometimes appeared to me to give temporary relief, but they are exhausting, and everything that makes the patient quit the horizontal position is to be avoided."

Before collapse comes on, he says, opiates should be given up. "It is useless in this stage to give any drugs in the hope of their producing specific action, but we must not on this account intermit our efforts to be of use. Drinks must be given in small quantity to relieve the craving thirst. Stimulants are to be given sparingly, and their effect on the pulse or the respiration carefully watched. Large quantities of alcoholic stimulants are injurious at the time, and if retained, help to disturb the stomach, when reaction with absorption comes on. But I believe that in almost any stage no harm can be done by continuing the use of small quantities of ammonia. Violent measures of blistering the spine, applying caustic acids, or the actual cautery have been used in this stage in the expectation of rousing the patient; but nothing is to be expected from such means."

With regard to prophylaxis, Dr. M. refers to Prof. Parke's elaborate work on Hygiene (reviewed in the No. of this Journal for April, 1865) as containing a *résumé* of all that is to be done, and merely refers to a few general principles. With regard to quarantine, Dr. M. remarks that the general experience of the past has gone to show that it is a very imperfect prophylactic." He strongly advocates the necessity for the free use of disinfectants, and for a supply of pure drinking water.

"Chloride of lime or Condy's fluid should be added to the excreta, which should be immediately removed and buried; washing apparel should be plunged in boiling water or washed in water containing either of them. Woollen bedding or clothing should be exposed to a heat of 210 Fahr."

He urges the importance of removing filth, cesspools, stagnant water, and the adoption of the usually recognized measures for promoting cleanliness, free ventilation, and the avoidance of crowding.

Though the work under notice does not present any absolutely new facts, and certainly does not enlighten us as to the true pathology of cholera, it contains much that may be read with advantage, and the author having had large experience in the disease his views are entitled to a respectful consideration.

2. Dr. Hartshorne's brochure is devoted to a brief sketch of the history, nature, causation, prevention, and treatment of cholera.

As regards the nature of cholera, he expresses the conviction that it is "a poison spasm; a ganglionic tetanus," but we find no evidence adduced which can satisfy us that this view is anything more than mere hypothesis.

Dr. H. reviews with ability the various causes to which cholera has been ascribed, and gives as his conclusion "that animal decomposition is the one great promotive cause of cholera; to which heat and moisture, &c., are merely adjuncts."

With regard to prevention, Dr. H. maintains, perhaps too unconditionally in the face of recent facts, that quarantine "never has succeeded, and never can" succeed in arresting the progress of the disease, and "that *sanitary* police includes the sum total of available measures for the prevention of cholera in any place. He briefly but clearly indicates the hygienic measures to be adopted.

As regards treatment, Dr. H. reviews briefly the remedies which have attracted most attention, and recommends as most efficient the treatment by antispasmodics and mild stimulants in small doses at short intervals with ice and external frictions, &c. He particularly extols as efficacious in the rice-water stage the following mixture based upon a formula given to him by the late Prof. Horner: "℞.—Chloroform. et tinct. opii et sp. camph. et sp. ammon. aromat. āā ʒjss; Creasot. gtt. iij; Ol. cinnamom. gtt. viij; sp. vin. gall. ʒij.—M. Dissolve a teaspoonful of this in a wineglassful of ice-water and give of that two teaspoonfuls every five minutes, followed each time by a lump of ice."

Without being able to adopt all Dr. H.'s views, we can commend his well-written book as containing much that is useful and worthy of attention.

3. Prof. Palmer in his pamphlet gives as the conclusions to which he has arrived, "that cholera is essentially produced by a peculiar poison, the exact nature of which is not fully understood; that this poison is aided in its production and diffusion by certain local conditions, the chief of which is filth; that the action of this poison in the system is promoted by the presence in the

blood of decomposing organic materials; that the effects of the poison are first manifested upon the ganglionic or organic system of nerves; that very generally, among the earliest and most important morbid effects which the *paralyzed* and deranged condition of the nervous force produces, are congestion and irritation of the nervous membrane of the alimentary canal, and profuse exhalations from its surface, leading to a watery diarrhœa, and at length to violent vomiting and purging of a nearly transparent fluid; that losses of the fluid portions of the blood together with the retention of certain excrementitious matters, aided, probably, by the peculiar cholera poison, so change the physical, chemical, and vital conditions of that fluid as to produce spasms of vessels, and cramps of various muscles—to produce obstructed circulation and respiration, and finally collapse and death; that occasionally, though very rarely, the cholera poison effects such changes in the blood and in the actions of the nervous system as to suspend the necessary life functions, and cause speedy death without the loss of fluids; but that such cases are so few and exceptional as to afford no basis for a rule of practice in the ordinary forms of the disease."

It will be manifest to the careful observer that, in the above conclusions, the author has ingeniously mixed up a few facts with a large amount of hypothesis, a course which has never contributed to the advancement of positive knowledge.

As regards treatment, he considers that "opium in proper doses and combinations in the earlier stages of cholera, before the vital powers are much exhausted, and while irritation of the stomach is the most prominent symptom, is *the great remedy* in the disease; or at least one of the prominent and essential items of a correct treatment."

4. The pamphlet of Dr. Fletcher, though it presents no new facts or ingenious hypotheses to throw light on the subject discussed, is a useful compilation, carefully made, and showing research. The author presents, briefly in succession, the history, symptoms, pathological appearances, course, duration and termination, causes and treatment of cholera.

5. Dr. Wm. Read, City Physician of Boston, in his "communication" restricts himself to the consideration of the contagiousness of cholera, and concludes that "cholera is contagious; not in the ordinary sense of the word, not as smallpox, or what are termed eruptive fevers, but in the sense of inoculation, by the introduction of the germs of the disease into the alimentary canal. "Avoid," he adds, "this, and infection and the spread of the disease are impossible; and it will expire by limitation." Cleanliness, scrupulous, exact and complete cleanliness is the perfect antidote, the impenetrable shield of safety. For want of this the poor, the squalid, and the careless imbibe the seeds of the disease, which are found in the clothing saturated with the poison, the unwashed person, the unclean vessels and in the close, unventilated rooms, impregnated with the exhalations from their crowded inmates, and where the air is full of death. It also follows, and with the certainty almost of a mathematical demonstration, that if the first foothold of cholera can be prevented, a community may be kept in perfect immunity."

"If," he adds, "the disease is one which requires a personal element for its initial term, all restriction may, with safety, be removed from articles of freight alone. It is with the passengers and their personal baggage, not the merchandise in the hold, that the danger lies; so that in the case of a vessel arriving on board of which the disease has made its appearance or which has sailed from a port where cholera existed at the time, to disembark the former at a suitable quarantine station, and purify those portions of the ship which have been occupied by them during the voyage, will be ample and sufficient protection. The merchandise may go free."

We should no more wish to depreciate the value of cleanliness as a means of abating the violence of cholera and of limiting its spread, than we would that of vaccination or inoculation as a measure of protection from smallpox or for modifying its intensity; but that cleanliness is "a perfect antidote," an impenetrable shield of safety against cholera is what we fear the history of the disease will not afford "a mathematical demonstration" of, any more than that

vaccination or inoculation affords *infallible* protection against smallpox or *invariably* even protects life.

6. The conclusions of Dr. Budd as given in his memoranda are: 1. That cholera is essentially contagious or communicable; and, 2d, that it is disseminated exclusively by the liquid discharges from the intestinal canal of cholera patients. The poison of these discharges, he states, may be transmitted, 1st, by the soiled hands of attendants on the sick; 2d, by means of bed and body linen, and other articles tainted with the rice-water discharges; and 3d, through the medium of the soil.

To prevent the spread of cholera, Dr. Budd gives the following directions:—

Receive all discharges from the alimentary canal into vessels charged with a solution of chloride of zinc or some other powerful disinfectant. Keep the hands of all attendants on the sick scrupulously clean.

Let all the tainted beds and linen be immediately burnt.

To make sure against infection by water, let all water be boiled before drank.

Privies, drains, latrines, &c., should be disinfected twice daily.

The correctness of Dr. B.'s views in regard to the mode of propagation of cholera and the efficacy of the preventive means he advises, it seems to us remains to be proved. The facts he has adduced in their support are not satisfactory to our minds, and without entirely rejecting them we are not prepared with our present knowledge to accept them as established truths.

7. Dr. Spitta, in his brief remarks, admits that whether the poison of cholera be animal, vegetable, chemical, or electrical, has not been satisfactorily settled; but he thinks the probabilities are greatly in favour of "some peculiar but hitherto inappreciable organism permeating the atmosphere; which organism, though contained in nearly harmless proportion in the air when freely circulating, is capable of germinating rapidly into deadly concentration in the air when stagnant, or when brought in contact with organic matter when in a stage of decomposition." He further thinks that this poison "is introduced first into the alimentary canal by the food, liquid as much as solid, taken therein, and that, being thence absorbed, is carried in the blood to the rest of the body." Dr. S. conceives, as a deduction from his statements, that there are two stages of the disease; "one in which the poison operates upon and irritates the alimentary canal; the other in which it is absorbed into the blood," which he denominates respectively the stages of irritation and absorption.

Dr. S. enumerates the symptoms of these two stages without any regard to their order or succession, and of course shedding no light on their relation, one to the other.

The *regimenal* treatment, Dr. S. states to be the same in both stages, and comprises three essentials: "First, the maintenance uninterruptedly of a perfectly recumbent posture; second, the application of warm counter-irritants to the abdomen and to any other parts of the body which are cramped or painful; and lastly, the administration of a light farinaceous diet, accompanied with copious supplies of unstimulating drinks."

The *medical* treatment, he says, differs in the two stages. In the first stage "the object is solely to allay the irritable state of the alimentary canal, with a view to the avoidance of inflammation. The remedy is *opium*," in small doses, frequently repeated, "and discontinued, lest internal congestion should ensue, as soon as a decidedly soothing effect on the alimentary canal has been produced." For the second stage (that "of absorption") "the remedy above all others" is, he says, "calomel, if carefully and judiciously administered, so as not to salivate." He advises it to "be given in very small though frequently repeated doses—a grain every half hour, in the smallest possible pill; and discontinued either on the abatement of sickness, on the least increase in the power of the pulse, or on the slightest tinge of bile in the evacuations."

The prophylactic treatment may be comprised in two words, he says—"cleanliness and repose."

8. Dr. Searle assumes the cause of cholera "to be a poisonous condition of

the blood, operating as a sedative or powerfully depressing agent upon the functions of the several organs of life, through the medium of their capillary or organic structure; by virtue of which the heart, primarily the great circulating organ of the blood, becomes so enfeebled or reduced in power that congestive accumulation or stagnation of the blood takes place in the veins, and is more especially discernible in those organs or parts the most remote from the heart's influence, and in which accordingly the circulation is the most languid; and as this, from reasons I cannot stop to explain, is unquestionably the veins of the liver, stomach, and bowels (the so-called portal system); hence the symptoms so early experienced, of distension and oppression in these organs, attended not unfrequently by constipation, but followed soon after by diarrhœa, which is consequent on or occasioned by the effusion or oozing out of the serous or watery part of the blood into the bowels, from the preternaturally distended vessels of these organs."

According to Dr. S., the liver and kidneys now cease to perform their functions, and the disease becomes aggravated by the retention in the blood of the poisonous elementary constituents which it is the office of those organs to remove, and the blood soon after becomes thickened by the loss of its serum, so that its passage through the capillary vessels of the lungs and brain is impeded. "It is then," he maintains, "this depressing agency of the contaminated blood, upon the action of the heart principally, and powers of the system generally, from which the symptoms successively arise, and to which they are severally to be referred." The indications of treatment are therefore, according to Dr. S., to divest the blood of its poisonous contamination, which can only be done by restoring the action of the liver, kidneys, and skin; and the only remedy by which this can be effected is *calomel*. "Universal experience," he says, "testifies that a grain or two of calomel will, with almost unerring certainty, under ordinary circumstances, excite the liver, and occasion one or more bilious evacuations; and not only does this, but, as its influence is general on the system when received into the blood, it excites all the secretions, and not only these, but the brain and all the functions."

We need not stop to examine the above fancy sketch, since it must be apparent to every careful observer that it has but very slender foundation in facts, and derives no support from experience.

"Of all stimulants," Dr. S. is "of opinion that calomel is the most powerful, and only proper one," and that "no other stimulant than calomel is required." He gives it in all stages of the disease, increasing the dose with the urgency of the symptoms and the progress of the disease; and, as there is difficulty in introducing the medicine into the circulation in the advanced stage of the disease through the ordinary channel of the stomach, he suggests the propriety of its introduction by fumigation, or by adding to a clyster a solution of bichloride of mercury, in the quantity of a quarter of a grain, and repeating it every hour."

We have endeavoured, in the preceding pages, to lay before our readers a brief summary of the several works on cholera which have recently been published. It will be perceived that the authors have rather exercised their ingenuity in the construction of hypotheses than bestowed labour upon the development of facts.

All assume as the cause of the disease the presence of a poison in the blood, though no one pretends to have detected there any such poison, nor do any two agree as to the manner in which it acts. It is assumed that it makes its first impression on the ganglionic nervous system, causing spasm according to one (ganglionic tetanus, Hartshorne), and according to another (Palmer), paralysis of that system. It is contended by a third that its first action is on the heart, reducing its power of propelling the blood (Searle); by a fourth that it causes a spasm of the vessels of the lungs, thus preventing the flow of blood to these organs (Johnson); by a fifth again that the first action of the poison is on the alimentary canal, and that it is subsequently absorbed into the blood (Spitta). It would be unprofitable to examine into the plausibility of these hypotheses, founded as they are on no substantial basis. Equally profitless would it be to discuss the

various plans of treatment lauded by their respective advocates, since if we can rely on statistics, they do not seem to have lessened the fatality of the pestilence.

To advance our knowledge of the disease, a different course must be pursued. The disease must be studied at the bedside; its phenomena traced from their first incubation to the end; the succession and relation of the symptoms determined; and finally the lesions in all the organs and changes in the fluids of the system investigated with the aid of the microscope, chemical tests, and all the improved methods which the advanced science of our day have rendered available for the purpose.

We are happy to state that Dr. Lionel Beale is now engaged in this work, and we cannot doubt that the investigations of this excellent physiologist and experienced microscopist will shed new and important light upon the subject.

It may be added that, so far as these investigations have been made public, they confirm in many particulars the observations of the late Prof. Horner and of Dr. Neill as to the destruction of the epithelium of the gastro-intestinal mucous membrane, and sustain the pathology of the disease which we have advocated in the successive numbers of the *Medical News* for July, August, and September of the present year.

As soon as practicable, we shall place before our readers the results of Dr. Beale's investigations. Some we shall give in the "Quarterly Summary" of the present number of this Journal.

ART. XXIII.—*Manual of Materia Medica and Therapeutics; being an Abridgment of the late Dr. Pereira's Elements of Materia Medica, Arranged in Conformity with the British Pharmacopœia, and Adapted to the Use of Medical Practitioners, Chemists and Druggists, and Pharmaceutical Students, &c.* By FREDERICK JOHN FARRE, M.D., &c., assisted by ROBERT BENTLEY, M.R.C.S., &c., and by ROBERT WARINGTON, F.R.S., &c. Edited, with numerous references to the U. S. Pharmacopœia, and many other additions, by HORATIO C. WOOD, Jr., M.D., Prof. of Botany, University of Pennsylvania, with two hundred and thirty-six wood engravings. 8vo. pp. 1016. Philada.: Henry C. Lea. 1866.

THE present work is designed as a substitute for the extended treatise of Dr. Pereira with a certain class of inquirers into the principles of pharmacological science. For those readers and students whose time is limited, and who only are in quest of an outline exposition of the subject, it will answer the purpose satisfactorily. In traversing, for the purpose of condensation, so extended a field as that included by the immense researches of the lamented author, whatever is selected and presented as the fruits of his labour must have a value from the reliability attached to it, and the clearness with which it is presented. The attempt would be vain to produce a book, upon the same plan, and having the same objects in view, upon a reduced scale, which would rival that which may be made by simply collating from the contents of the great work of Dr. Pereira; and however we may feel with regard to the absence of the immense exposition of learning and research which characterizes the original, we cannot peruse the pages of this synopsis without recognizing the hand of the great master in pharmacological science.

Had the abridgment appeared as an original treatise, it would have made the reputation of its author; indeed, it reminds one of bygone days, when the lectures of Pereira first attracted attention in the *London Medical Gazette*, where his prelections were hardly as extended as the articles contained in this volume, when his name at once took place among the distinguished cultivators of the branch, ultimately to become pre-eminent.

To the profound student of the materia medica the encyclopedic treatise of the great English pharmacologist must ever remain a standard book of authority, of study, and reference, while as a monument of industry it will be a representative one of the age. It must be hereafter ranked with the first in the list upon

special branches of medicine, which stand prominently forward at different periods as evidences that minds existed capable of grasping these branches in all their exemplifications and details, and like the Treatise of Dioscorides, the Apparatus Medicaminum of Murray, the Dictionary of Merat and De Lens, or our United States Dispensatory, will be appealed to in after times to determine the sources of the knowledge which has enlightened the world in the department of Materia Medica. The abridgment of the work as it was issued from the English press, however calculated for the special market for which it was intended, was not suited for this country. It had no reference to our Pharmacopœia, and in addition did not embrace many articles upon which information would be sought. The task of adding such desiderata has devolved upon Dr. Horatio C. Wood, who has taken becoming pains to supply the deficiency. "Over one hundred articles on substances in the United States Pharmacopœia have thus been introduced; many of them, indeed, on subjects of but little importance, but others on drugs which occupy a prominent position amongst our everyday remedies."

Upon examining the contributions to the volume by Dr. Wood, we accord with him in the statement that the office of the American editor to the abridgment "has been no sinecure." It must be admitted that his labour has been faithfully and conscientiously performed.

The work is handsomely gotten up; is well printed in large type, and is ornamented with the illustrations of the American edition of Pereira's Elements, clearly impressed in their appropriate positions. We commend this Abridgment to American students as eminently fitted to meet their wants.

ART. XXIV.—*Reflex Paralysis: its Pathological Anatomy, and Relation to the Sympathetic Nervous System.* By M. GONZALEZ ECHEVERRIA, M. D. (Univ. of Paris), Physician to the Charity Hospital, New York; formerly Assistant Physician to the National Hospital for the Paralyzed and Epileptic, of London, etc. etc. 8vo. pp. 80. New York: Baillière Brothers, 1866.

IN this interesting monograph, which originally appeared in the *New York Medical Journal* for April and May of this year, the author has collected from various sources and critically examined the history, symptoms, and anatomical lesions of many cases of paralysis, with the object of determining the histological changes which take place in the nervous system in reflex paralysis, and the facts indicating its relation to the sympathetic system.

Dr. Echeverria maintains that reflex paralysis is induced through the agency of the sympathetic system. This opinion he bases upon the intimate connection existing between the nerves usually affected and the ganglionic system. He thinks that the spinal origin of the latter and its important influence in the causation of fever and convulsions, often premonitory symptoms of reflex paralysis, most strongly sustains such a view. He also admits that cases of temporary paralysis may follow exhaustion of the incitability of the cerebro-spinal and ganglionic centres.

The pathological alterations observed in the various cases of paralysis cited by our author may be summed up as follows:—

"A congestive state of the meninges, atrophy and granular degeneration of the anterior and lateral columns of the cord; same degeneration of the anterior cornua of the gray substance, not extending much further than the intermedio-lateral tracts; more or less abundance of corpora amylacea in both substances of the cord, especially with infantile paralysis; granular degeneration of the nerve-cells, with hypergenesis of brown pigment granules, mainly in those of the sympathetic ganglia; hypergenesis of nuclei and fibres in the neuroglia and connective tissue of the ganglia; and finally a fatty granular degeneration of the peripheral nerves—*neuritis propagata*—capable of being the only lesion accounting for the paralysis."

Dr. Echeverria has noticed in two instances of reflex paraplegia, paramount

contraction in the muscles of the paralyzed limbs. In infantile paralysis he finds that the muscles do not respond to the electric current directly applied. The application of an induced current, however, to muscles distant from those of the affected regions, often determines contraction of those which did not respond to the direct application of electricity. Our author says that he has noticed this phenomenon, especially in infantile paralysis, when faradization of muscles of the anterior femoral or of the gluteal region has determined manifest contraction of the gastrocnemius, or of the extensor digitorum, which did not appear on the current being directly applied to these very muscles.

We commend this monograph to our readers as one well worthy of attentive perusal. It is a useful addition to the literature of a very obscure class of affections. J. A. M.

ART. XXV.—*Report of the Board of Health of the City and Port of Philadelphia to the Mayor, for* 1865. 8vo. pp. 66. Philadelphia.

FROM this report we learn that, with the exception of smallpox, which prevailed to the greatest extent during the earlier months of the year, and caused 524 deaths, being 264 more than were reported from the disease in 1864, no epidemic of an infectious or contagious character occurred during 1865.

From the well arranged and highly interesting statistics furnished by the report before us, we select the following general summaries:—

Births. The number of births registered during the year 1865 amounted to 15,428—being 163, or 1.04 per cent. less than in 1864. Of the births, 8,187 were males, and 7,241 females.

The number of births were the greatest in *October*, 1,379; then in *July*, 1,352; in *March*, 1,345; in *September*, 1,342; in *December*, 1,331; in *August*, 1,315; in *January*, 1,309; in *April*, 1,251; in *February*, 1,250; in *June*, 1,223; in *November*, 1,214; in *May*, 1,117.

The number of *twin births* was 179, an increase of 22 over the previous year.

Three sets of *triplets* were registered during the year, one in August, one in September, and one in December.

The number of births among the *coloured population* registered during the year amounted to 280, being 38 or 15.66 per cent. greater than in 1864.

The number reported as *stillbirths* for the year was 716: 391 males, 325 females.

Marriages. The number of marriages registered during the year was 6,864—exceeding those of 1864 by 112.

The number of marriages in each quarter of the year was as follows:—

First quarter, ending	March	31,	1,702 = 24.79	per cent.
Second "	"	June	30, 1,629 = 23.74	"
Third "	"	Sept.	30, 1,833 = 26.71	"
Fourth "	"	Dec.	31, 1,700 = 24.76	"

Deaths. The number of interments in the city during the year amounted to 17,169, being a decrease from the previous year of 423, or 2.40 per cent. Of the interments, 15,772 were of whites, and 1,397 of coloured persons; 9,273 were of males, and 7,896 of females: adult males, 4,330; adult females, 3,657: male children, 4,943; female children, 4,239.

If from the entire number of interments we deduct the stillborn and the bodies brought into the city for interment, we have left for the actual number of deaths occurring within the city, 15,633, being about one in every 47 of the population. But to show the exact number of deaths from actual diseases which occurred in the city during 1865, there should have been deducted also, the deaths from violence and other accidental causes, 728, and those from old age, 408, making a total of 1,236. Some of these have been, no doubt, already included under the head of the dead that were brought into the city for interment.

The mortality of adults in 1865 = 7,987, was a decrease from 1864 of 207, or

2.52 per cent. The mortality of children = 9,182, was a decrease from 1864 of 206, or 2.19 per cent.

Of the entire number of deaths, 4,295, or 25.01 per cent. occurred in children under *one year of age;* 1,371, or 7.98 per cent. in those between *one and two years;* 1,644, or 9.57 per cent. in those between *two and five years:* only 321, or 1.86 per cent. occurred in those between the age of *ten and fifteen years;* while between the age of *twenty and thirty*, 1,957, or 11.39 per cent. deaths took place.

The total number of deaths in children under 10 years of age was 8,181, or 47.52 per cent., while those in adults over 70 years of age amounted to 1,162, or 6.80 per cent.

The following table shows the number of deaths per month during the year 1865:—

	Males.	Females.	Adults.	Children.	Total.
January	739	634	658	715	1,373
February	870	680	743	807	1,550
March	999	869	924	944	1,868
April	775	636	722	689	1,411
May	681	546	667	560	1,227
June	939	751	728	962	1,690
July	969	869	630	1,208	1,838
August	934	825	702	1,057	1,759
September	570	470	484	556	1,040
October	582	502	534	550	1,084
November	647	638	676	609	1,285
December	568	476	519	525	1,044

The greatest number of deaths reported from any one disease were those from *consumption of the lungs*, namely, 2,026, a decrease of 73 from those of 1864. The largest number of deaths from consumption took place in March, 240, and in November, 198. The smallest number occurred in September, 121, and in October, 127. The average of deaths per month was 169; per week, 39; per day, 6.

The next most destructive disease was *cholera infantum*, 884 deaths from which are recorded—being an increase over 1864 of 243: 471 were males, 413 females; 632 of the deaths were in infants under *one year* of age, and 217 in those between *one and two years*, and 35 between *five* and *ten years*.

From *typhoid fever* 773 deaths are recorded: namely, in males, 415; in females, 358. The deaths in adults amounted to 568, and those in children to 205.

There were 716 interments reported of *stillborn* infants—391 males and 325 females.

The deaths from *convulsions* amounted to 695, being 41 less than in 1864: 363 were in males, 332 in females: 40 were in adults, 655 in minors.

Six hundred and ninety-seven deaths are recorded as having resulted, vaguely, from *debility*, being 59 less than in 1864. In males, the deaths from this cause amounted to 379, and in females to 318: 272 were in adults, 425 in minors.

To *scarlet fever* is attributed 624 deaths, being 275 more than in 1864. Of these deaths 301 occurred in males, and 323 in females; 6 in adults, and 618 in children. Of the deaths 245 occurred in the first quarter of the year, 164 in the second, 111 in the third, and 104 in the fourth.

The mortality from *smallpox* was 524, an increase upon the preceding year of 264. The deaths in adults amounted to 151, in children to 373. In males the deaths amounted to 311, in females to 213. Among the deaths there were 50 coloured people, and five were brought from the country.

The deaths from *old age* were 408: 152 males, 256 females. The excess of deaths from old age in 1865 over those from the same cause in 1864 was 130.

The number of deaths from *inflammation of the brain* amounted in 1865 to 405—217 males, 188 females: 61 were in adults, and 344 in children: 372 of the

dead were born in the United States, and 24 were foreigners: of 9 the place of birth was unknown.

The number of deaths from *dysentery* was 371: 194 being in males, and 177 in females: 151 in adults, 220 in minors. Seventeen were brought from the country into the city for interment.

Diarrhœa gives, in 1865, 367 deaths, a decrease from the previous year of 87. Of the deaths 263 were in males, and 104 in females: 228 were in adults, 139 in children. Thirty-eight of the bodies were brought from the country.

Croup. From this disease the deaths amounted to 350, being a decrease from 1864 of 105. One hundred and eighty were in males, 170 in females. In children under 5 years of age the number of deaths was 307, or 87.71 per cent.

Typhus fever. The number of deaths from this disease was 334—170 males, 164 females—250 adults and 205 minors. Ninety-three of the deaths occurred in the Almshouse.

The number of deaths from *diphtheria* was 260, a decrease from the year 1864 of 97. One hundred and twenty-nine of the deaths were in males, 131 in females: 245 were in children—boys 122, girls 123. The deaths were distributed throughout the year as follows: During the *first* quarter there occurred 91; during the *second*, 54; during the *third*, 36; during the *fourth*, 79. Thirteen of the bodies were brought from the country.

Cancer was the cause of 188 deaths. The location of the cancer, as far as given, was the stomach and bowels, in 37; the uterus, in 35; the breast, in 21; the liver, in 11; the face and the rectum, each in 4; the nose, in 2; and the œsophagus, the pylorus, the leg, the testes, the lungs, the arm, each in one. The location of the cancer is not given in 68 cases.

Apoplexy was the reported cause of 181 deaths—100 occurring in males, and 81 in females. One hundred and seventy-five were in adults, 6 in minors.

Gunshot wounds. The deaths from this source amounted to 176, a decrease from 1864 of 190.

From *hooping-cough* 135 deaths are registered, being 48 more than in 1864. Of the deaths 54 were in males, 81 in females. All the deaths occurred in minors.

Delirium tremens is set down as the cause of death in 67 cases—62 males, 5 females. Twenty-five of the patients were born in the United States; 29 were of foreign birth, and of 13 the nativity was unknown. Twelve of the cases occurred in the Almshouse.

Spotted fever. Under this head were reported 62 deaths—28 in males, 34 in females: 11 were in adults and 51 in minors. Five of the bodies were brought from the country.

There were registered 31 deaths from *suicide:* 25 in males, 6 in females. Of the deceased 12 were born in the United States; 14 were of foreign birth; of 5 the nativity was unknown.

The number of deaths set down as from *tumours*, without any further information, was 25—8 in males, 17 in females.

Hernia. The deaths reported from hernia amounted to 15, of which 13 were in adults, and 2 in minors. Nine were born in this country, and 6 abroad.

Murder. The number of deaths registered from violence or murder was 13, of which 12 were in males, and one in a female: 8 were natives of the United States, 4 of foreign birth, and of one the nativity was unknown.

Hydrophobia. Two deaths are recorded from hydrophobia; both were in children, 16 and 20 years of age; both females, born in the United States.

Of deaths from *congestion of the brain* the number recorded in 1865 was 386—males 218, females 168. From *inflammation of the brain*, 405—males 217, females 188. From *cerebro-spinal meningitis*, 130—74 males, 56 females.

Of deaths from *congestion of the lungs*, the number recorded in 1865 was 136—males 73, females 63. From *inflammation of the lungs*, 776—males 431, females 345. From *inflammation of the bronchi*, 119—males 55, females 64. From *inflammation of the pleura*, 22—males 13, females 9. From *inflammation of the larynx*, 49—males 25, females 24.

Of deaths from *erysipelas*, the number recorded in 1865 was 79—males 50, females 29. From measles, 54—males 23, females 31. D. F. C.

ART. XXVI.—*On Spermatorrhœa: its Causes, Symptomatology, Pathology, Prognosis, Diagnosis, and Treatment.* By ROBERTS BARTHOLOW, A. M., M. D., Professor of Physics and Medical Chemistry in the Medical College of Ohio; Lecturer on Clinical Medicine, and Physician to St. John's Hospital, Cincinnati; formerly Assist. Surgeon (Captain) U. S. Army, etc. etc. 12mo. pp. 112. New York: William Wood & Co., 1866.

THIS little volume contains a brief and well-written summary of what has been learned about masturbation and spermatorrhœa since the days of Hippocrates, and the views of the most recent and most respectable writers on the subject.

It recalls to remembrance Dr. Rozier's *Habitudes Secrètes chez les Femmes*, and Tissot's well-known book, in which there is a chapter on "Simple Gonorrhœa," defined by Galen to be "a flow of semen without erection." These and similar works have established in the popular mind excessive dread of spermatorrhœa. It is by no means rare to meet with patients who fancy themselves to be afflicted with this malady simply because they discover a slight discharge of mucus from the urethra. This error leads many into the hands of advertising practitioners, who pick their pockets and torture them with Lallemand's *porte caustique*, often to the serious and permanent damage of their urinary organs, without relieving their minds from disorder in this connection.

"The true pathology of spermatorrhœa," the author is "disposed to regard," "essentially as a deranged state of the spinal system," consequent, "in a vast majority of cases as they occur in this country," on "venereal excesses and especially masturbation."

In reference to the application of solid nitrate of silver to the prostate, as practised by Lallemand, whose name is most extensively known in connection with the malady under consideration, Dr. Bartholow says (page 80): "Very diverse views have obtained since, as to the utility of the *porte caustique*. It has not, in general, produced that favourable impression upon those cases, claimed for it by its advocates. Not only does it often fail to cure the patient, but the application of caustic is frequently followed by most serious consequences. In all cases it produces great irritation, frequently strangury and bloody urine, and sometimes severe urethritis and cystitis. Too long contact of the caustic may induce induration and organic stricture, a very serious complication of the case. Notwithstanding these sometimes unfortunate results, some surgeons adhere to it, and a few claim all that Ducamp, or Amussat, or Hunter, or Home, did in former time." In spite of its severity and its very rarely curing, our author adds "We should not, therefore, reject this practice of cauterization entirely."

If spermatorrhœa is simply a functional derangement of the spinal nervous system, as Dr. Bartholow is disposed to believe, should it not be treated by removing the causes and by the use of such means as are invigorating generally rather than by local applications of doubtful efficacy at best, which are often followed by most serious consequences?

The extent of the author's experience or his success in the management of this very distressing affection is not definitely stated. Although no material addition is made to the profession's stock of information on the subject, the work will be found acceptable and useful to those who have not leisure or opportunity to consult many books.

W. S. W. R.

ART. XXVII.—*The Elements of Prognosis in Consumption, with Indications for the Prevention and Treatment.* By JAMES EDWARD POLLOCK, M. D., F. R. C. P., Physician to the Hospital for Consumption and Diseases of the Chest, Brompton, etc. etc. etc. 8vo. pp. 432. London: Longmans, Green & Co. 1865.

THIS work is on a very important subject, the prognosis of consumption. All physicians who are really familiar with this disease are aware that it is in many

persons the most prolonged disorder, sometimes not apparently shortening life an hour beyond its natural termination; in other cases it is a most acute and hopeless disease. The fact is, that tubercular disease attacks all animals, the human race less frequently than many other varieties; for example, sheep and monkeys. And it is a matter of importance for us to determine when it is insusceptible of treatment, and when we can modify it almost at our pleasure.

The work of our author is to decide by his observations how far the prognosis of phthisis is susceptible of rules.

Although our author has not added much that is positively new on the subject, still he gives some interesting statements with which we entirely agree.

"Viewing the disease as a whole," he observes, "in which are included all its varieties, it must be evident that the opinions of the older authorities quoted on the character to be assigned to it, were incorrect. Consumption lasts much longer than has been stated by pathologists, or than is believed by the public. Many cases at which we are inclined to smile, which were given up by doctors, but outlived the prediction, to arrive at old age, were undoubted recoveries from phthisis. Many more were instances of an early invasion of the disease with subsidence of the symptoms, and long tolerance of the deposit. When these cases are considered, added to the known instances occurring in the practice of all of us, of tubercle in every stage, including cavity, being resisted and tolerated by persons otherwise healthy, for eight, ten, and even twenty years, we are compelled to acknowledge the undoubted tendency to extreme chronicity which this affection often manifests. It will be remembered how such cautious and skilled observers as Clark and Williams have extended the nominal period of duration to four years, the latter authority attributing the supposed extension of the term of the disease to the use of cod-liver oil. We go a step farther, and maintain that owing to a greater accuracy of diagnosis the revelation of a lengthened duration of consumption formerly suspected, but now certified, has taken place, and that of this fact we can be as secure as of any other observation on the natural history of disease. We believe also that the term of the disease has been extended not only by the use of oil, but by the sensible, non-specific, and supporting treatment which modern practitioners follow, and by the omission of the lowering, antiphlogistic, and depletory measures formerly so common. Especially, bloodletting has been given up, and the pleuritic pains of phthisis, and its frequently recurring hæmoptysis, are no longer bled for. In the face of such facts as we are able to record, we cannot wholly agree with Sir J. Clark, that the greater means of the wealthy, and the possibility of obtaining all comforts and luxuries, have been the chief means of adding to the length of life of the phthisical. Some of our most prolonged cases have been among the out-door patients of a London hospital; among mechanics, following unhealthy trades, and with but scanty supply of wholesome food, eaten in ill-ventilated and dusty chambers, without possibility of obtaining change of air, or even enough of fresh air! It is doubtless true, that these deprivations are pernicious agents, and that they shorten life in the phthisical and non-phthisical; but we urge that if, in spite of such obstacles to resistance or recovery, consumption is so frequently seen in a prolonged form, the period of its duration as a whole, could it correctly be ascertained in all classes, poor and rich, must be far higher than even the highest estimate which has been made by the boldest or most hopeful investigation. It will be seen from the table that the average *duration while under observation*, of all the cases taken together, was *two years, six months* and *three-fifths nearly;* but this represents only a part of the period of the affection; and in it are included cases of the most acute and rapid form, as well as those which had become chronic. How much longer did these patients live? (deducting the 129 who died while under treatment) is our question. But who shall reply to it? Figures can do no more, and the results of many years' study of such cases, with unusual opportunities, is so far unsatisfactory that we can state, that out of 3,566 cases only 129 had died at the end of two years and something over six months. Yet, still out of these recorded observations, the fact is evident that, even while the average duration, during the time they were under observation, is so high, a much longer time must be assigned to the greater number of those who were surviving when the last note was recorded. On this

point it is interesting to note the state on leaving hospital; and most careful calculations have been made to elucidate it. On the whole, the condition of these patients has been favourable to the expectation of life, for a considerable time; and although it would be impossible to calculate such expectation with accuracy, or from figures, to derive a conclusion capable of being applied to individual cases of phthisis, yet it is easy to see that the whole average duration of the disease must be raised beyond even the period assigned to it by the observers referred to."—pp. 68–70.

The early stages of phthisis are often much prolonged, and sometimes the symptoms disappear entirely. This is one of the peculiarities noted by our author, and he states with great justice that physicians have often fallen into disrepute by giving an unfavourable prognosis, even when a cavity exists. There is no doubt, according to our observation, that these cases sometimes offer nearly as good probabilities of life as those of healthy people, and it is all-important for physicians to remember that, although, they are called to patients with phthisis and cavities in the lung, yet these do not always mean death, especially not an early one. These patients, if there be not other signs of constitutional irritation, often live many years in tolerable health.

We are glad to find that Dr. Pollock asks attention to the connection of phthisis with fistula in ano. This was one of the favourite themes of the late Dr. Parrish, of this city, but strange to say, even at the present time, we see surgeons actually operating on these cases. That is, doing precisely what is calculated to destroy the patient by drying up a natural and useful discharge, prematurely.

The author's observations on the treatment of phthisis are, in general, judicious and correct. We only wish they contained more new facts. He sums them up in the following words:—

"1. To promote healthy blood changes.

"2. To maintain full respiratory action.

"3. To eliminate morbid matters from the system.

"4. To supply the largest amount of the most nutritive food which can be digested."

On the whole, we may state that the book gives us a fair account of the prognosis of phthisis, especially in one respect, that if there be not great fever and other marks of constitutional disturbance, we should not look for a speedy termination, but admit that the patient can sometimes recover, and that he very often may enjoy the usual comforts of life.

In one of the latter chapters of the work, the author speaks especially of the causes of fatal consumption. This is particularly true of those whose work confines them to close and hot apartments without exercise

He speaks of the crowded rooms in which sewing girls work in London, and might have added New York, Philadelphia, and all other large cities. Numbers of these are literally killed, and we may add, that in the United States, many in much more favoured walks of life, are killed by the dry and heated air in which they habitually live.

The author is evidently a sound and reliable practitioner. His remarks on both prognosis and treatment are correct, but we cannot help asking either for a more full and perhaps more conclusive view, or else more positively new facts. Still, we like to hear all the old truisms relative to consumption, again and again repeated, and after a time we trust that we shall obtain a more satisfactory control over it.

W. W. G.

ART. XXVIII.—*Medical Diagnosis with Special Reference to Practical Medicine. A Guide to the Knowledge and Discrimination of Diseases.* By J. M. DA COSTA, M. D., Lecturer on Clinical Medicine and Physician to the Pennsylvania Hospital, &c. &c. Illustrated with engravings on wood. Second edition revised. 8vo. pp. 784. Philadelphia: J. B. Lippincott & Co., 1866.

IN our number for October, 1864, will be found a review of this work, and we are pleased to find that the favourable opinion there expressed of it has been

confirmed by the profession, as is shown by the call for a new edition within less than two years. The present edition has been revised and about ninety pages of new matter and twenty-two wood-cuts added. The chief additions are in the chapters on diseases of the brain, of the larynx, of the blood, on the urine, and on parasites, and in the section on abdominal enlargement.

We must compliment the publishers on the excellent style in which they have issued the work.

ART. XXIX.—*Notes on Health in Calcutta and British Emigrant Ships, including Ventilation, Diet, and Disease.* By W. H. PEARSE, M.D., Edin., Government Emigration Service. 12mo. pp. 160. London, 1866.

WE scarcely know what to say in relation to these "Notes on Health" by Dr. Pearse, so as to convey to our readers a correct idea of the nature and amount of information to be derived from them, and at the same time to do no injustice to their author. It is very certain that many useful hints are thrown out in respect to ventilation, diet, and water in their hygienic agencies, on board especially of emigrant vessels sailing to and from warm latitudes. The notes so far are expressed in a tolerably intelligible language. But in those devoted to a consideration of the pathology and treatment of the diseases which occur on board of emigrant ships, Dr. Pearse has indulged in a style so strange and obscure that we have found it a very difficult task to make out his real meaning. Indeed we do not feel very certain that we have done so after all our efforts to that effect.

His account of an outbreak of an "epidemic sore throat" on shipboard is a most remarkable specimen of medical description.

He defines scarlatina as follows :—

"Such a phenomenon as scarlatina will be cognizant to the mind as a natural variation of man's state in earlier individual life, at this period of time and nature—that it is not a specific thing, but a continued and natural and necessary variation. That it cannot be a fixed specific 'disease,' because that man himself is a transitional type and existence of matter and life, so the contained variations must be the necessary order of his, at any time, then actual present age."

We will simply quote as a sufficient justification of our criticism of the style of Dr. P. his very dark and scarcely intelligible definition of cholera :—

"I should view the symptoms which we call cholera, as the sequelæ, the natural course, perhaps, towards natural self-restoration; the result, probably, of some momentary—it may be infinitesimal—change antecedently happened."

"Such a hypothetical view, of what we call cholera, may embrace many possible means of production. Cholera may be of the nature of a cycle of change natural, and inherent, and inevitable, in the very composition and nature and relations of the human body, and its whole surroundings and existences, and true parts; it may be, also, or not be infectious, or partake of both these characters, but may yet more than in the body itself, be the result potentially, of some one or more chief change in external physical influences, as of heat, light, magnetism, etc.

"A recognition of the exquisite balance of infinite actions, relations, and parts which matter exhibits, or, rather, which are *of matter and matter of them*, in its course and forms in man, and other living things, and whose rate rather than balance, is not a fixed, but as yet an unexpressed—fixed—progressive one, evolving not perfect life or rate, but a present formative series, *e. g.*, childhood with its necessitous passage into the rate of the eruptive fevers; youth with its power and passions; manhood with its passage to tubercle, cancer, etc.; old age with its cessation of the vital power of matter, in its then existing combinations, etc., opens the view to the vast relations, in extent and time, of man and his deviations, but such are man's senses, mind, and place in the whole series, that he is, by the simple observation of any fact, made cognizant of the whole

series of antecedent relations, these being actually parts of such fact."—"Thus, then, however immense may be the field which the human body, in the full view of any of its deviations, such as cholera, may present, and however hopeless may be the attempt to travel this whole field, yet cholera is, in its very existence, one and part of the period and 'forms' of all other existences; and hence, the almost —nay, actual—certainty of hope of the presence *at hand to us* of the means, mineral elements, or organic matters, lost or wanting, in the evolving rate or stream of life or death—in the compounds of matter of which the animal frame is composed." D. F. C.

ART. XXX.—*Atlas of Surgical and Topographical Anatomy.* By B. J. BÉRAUD, Surgeon and Professor to the Maternity Hospital of Paris, Ex Prosector and Assistant Anatomist to the Faculty of Medicine of Paris, etc. etc. Illustrated by one hundred Plates drawn from Nature, by M. Bion. Translated by Robert Thomas Hulme, M. R. C. S., Eng. Parts 1, 2, and 3, Royal 8vo. London: H. Baillière, 1866.

THIS work is intended to illustrate the surgical and regional anatomy of the human body; and is to be completed in ten monthly parts, each part containing ten plates with descriptive text. The first three parts, which we have received, contain thirty plates devoted to the several regions of the head and neck.

The drawings, and the engraving of the plates are extremely well executed, the several parts are represented with unusual distinctness, and the colouring is most artistic. Besides the explanatory text there is given with each figure a brief notice of the relations of the region to pathology and operative surgery.

We can strongly recommend this work for its accuracy, convenient size, and beauty of execution to both students and practitioners. When the complete work is received we shall be able to give a fuller notice of it.

ART. XXXI.—*A Practical Treatise on the Diseases of the Testis and of the Spermatic Cord and Scrotum.* By T. B. CURLING, F.R.S., Surgeon to the London Hospital, &c. With numerous wood engravings. Third Edition. Revised and enlarged. 8vo. pp. 609. London: John Churchill & Sons, 1866.

TEN years have elapsed since the publication of the second edition of Mr. Curling's classical treatise, during which the author has enjoyed extensive opportunities of improving his knowledge of the diseases of the testicle and its appendages, and the fruits of this experience are incorporated in the present edition. Not only has the whole work been thoroughly revised and additions made to most of the chapters, but the subjects of inguinal hydrocele, sterility, and congenital vascular tumours of the scrotum, are introduced and ably discussed.

Inguinal hydrocele and congenital vascular tumours of the scrotum are briefly treated, but much valuable and instructive information in regard to them is furnished.

Sterility in the male, a subject rarely treated of, Mr. C. discusses with great ability. It is usually confounded with impotence; recent researches, however, have shown that a want of aptitude to impregnate may co-exist with the capacity for sexual intercourse; or, in other words, that man is subject to *sterility* independent of *impotency*. Sterility arises, according to Mr. C., from the following causes: 1. Malposition of the testicles. 2. Obstruction in the excretory ducts of the testicle. 3. Impediments to the escape of the seminal fluid. 4. Aspermatismus, or non-ejaculation.

Mr. Curling's observations on spermatorrhœa are very instructive and sensible.

Our experience has long since convinced us that in many cases the affection is in great part the result of mental disturbance caused by reading treatises on the subject, or by alarm created by the misrepresentations of charlatans who have found this a most profitable field, and they have cultivated it without remorse for the wretchedness and despondency, sometimes even tending to suicide, which they thereby inflict on their victims. We are sustained in this view by the high authority of Mr. Curling, who says:—

"In a great proportion of the cases which come under notice in practice, the complaint [spermatorrhœa] is extremely slight, or more mental than real. The ability to perform well the duties of the sex is a matter of such concern to most men that it is not surprising that timid or weak persons, misled by artful advertisements and empirical works, should sometimes be troubled with unfounded fears, and fancy that they are incompetent and labouring under spermatorrhœa when no such disorder exists. The minds of these persons are usually more or less unhinged by dyspepsia, and the discharges natural in health are regarded as morbid. They are reminded, in the writings alluded to, of having once practised the foolish habit common in schools and too little restrained by teachers, but which have been long abandoned, and have left no permanent ill effects. I have met, indeed, with men, even of great intelligence, who have been so impressed with the conviction of being seriously affected with spermatorrhœa, or who have been so unhappy in consequence, without any real cause, that their condition has amounted almost to monomania. Care is required in dealing with these cases. Medical men are too apt to treat the complaints of such patients lightly, making no efforts to allay their anxieties; a course which often leads them to apply for aid in illegitimate quarters, and to become the victims of unprincipled men. The surgeon should endeavour to obtain the patient's confidence, and whilst paying due attention to his general health, should strive to convince him of the groundless nature of his fears, and of the unimportant nature of his local complaint."

ART. XXXII.—*A Guide to the Practical Study of the Diseases of the Eye; with an Outline of their Medical and Operative Treatment.* By JAMES DIXON, F. R. C. S., Surgeon to the Royal London Ophthalmic Hospital, Moorfields. From the third London edition. 12mo. pp. 400. Phila.: Lindsay & Blakiston, 1866.

IN our number for Oct. 1860, we have expressed our estimate of this useful and reliable guide to those commencing the study of eye diseases. Though somewhat limited in its scope, all the subjects embraced in it are discussed sensibly, and the therapeutical directions are marked by calm and sound judgment.

In the present edition the author has not restricted himself to a revision of his former one, but a considerable portion has been rewritten, and the remainder rearranged and corrected. These changes have considerably added to the value of the work.

QUARTERLY SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES

IN THE

MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *Existence in the Tissues of Animals of a Substance closely resembling Quinia.*—Dr. Henry Bence Jones, in a lecture delivered March 23d, 1866, before the Royal Institution of Great Britain, announced his discovery everywhere in the tissues of animals, of a substance closely resembling quinia. He has proved it to exist in living as well as in dead tissues. He terms it animal quinoidine. We have not space for the details of his experiments, which are published in the *Medical Times and Gaz.*, Aug. 18th, 1866, but we may say that they appear to have been conducted with care and devised with great ingenuity. Dr. Jones has also shown that when sulphate of quinia is given to animals it rapidly passes from the blood into all the tissues, even into the crystalline lens.

"Thus, then," he says, "the quinia goes everywhere; and wherever it goes it meets with the natural fluorescent substance like quinine which most probably is constantly forming and undergoing oxidation. The incoming quinine causes a temporary excess of quinine in the textures. Probably it causes a stoppage of the fresh formation of quinine from albumen; a temporary arrest of the changes going on; a transfer of action probably to the quinine introduced. so that with large doses deafness and great prostration and almost imperceptible pulse are produced in man, whilst in guinea-pigs death even is caused by the extreme prostration. In small doses, quinine, probably like alcohol, gives an immediate stimulus when the first chemical action takes place; but soon the quinine retards the chemical changes in the nitrogenous substances, just as alcohol, by its secondary action, retards the chemical changes in the hydrocarbons in the different textures.

"Possibly the increased resistance to changes in the textures and in the blood produced by excessive doses of quinine or alcohol, is analogous to that state well known to medical men under the very indefinite and probably incorrect name of uræmia.

"From these experiments two hopeful prospects of possible discovery arise—1st, as to the explanation of the cause and cure of ague; 2d, as to the treatment of diseases in parts of the body external to the bloodvessels.

"1. Assume that a substance like quinine exists, during health, in the textures, can its rapid destruction and removal through the action of marsh miasm give rise to ague? Does quinine cure ague by furnishing a substance which retards the changes which go on in the textures? and in the well-known property of arsenic to preserve organic substances have we also the explanation of its power in curing ague?

"2. If the chemical circulation can carry alkaloids even into the non-vascular tissues, is it not reasonable to suppose that medicines pass through the blood and act on the textures; and is it not most probable that they take part in

every chemical change that occurs outside the bloodvessels, as well as in the blood itself? Still further, may we not expect that among the multitude of new substances which synthetical chemistry is now constantly forming, some medicines may be discovered which may not only have power to control the excessive chemical changes of the textures in fevers and inflammations, but may be able to remove the products of insufficient chemical action even in those diseases which affect the non-vascular textures, as, for example, in cataract and in gout?"

2. *On the Heat of Fluidity, or Latent Heat of Animal Bodies.*—Dr. B. W. RICHARDSON gave to the British Medical Association, at its late meeting, a brief description of his recent original researches on this subject. These researches were entirely new, and opened up a wide field of thought in the science and practice of medicine. The author had been led to them by the observation that when a part of the body was frozen, at the moment of freezing there was always a rise in temperature, indicating the evolution of heat previously insensible. This fact led him to determine the heat of fluidity of blood, fat, albumen, gelatine, brain matter, blood-corpuscles, and other structures. Having briefly entered into details on these points, the author illustrated his subject by referring to various physiological phenomena, dwelling particularly on the function of the blood-corpuscles. These, he said, played a part previously unrecognized. They were the bearers of heat by rendering heat liberated in the pulmonic circuit latent, and conveying it to the tissues to be there redelivered in the process of condensation. Fatty substances, in like manner, rendered heat latent in the pulmonic circuit, and conveyed it to the extreme parts.

In a paper published in the *Med. Times and Gazette*, Aug. 4, we find some further details of Dr. Richardson's researches. He states "that each part of the body that has the property of being transferred from the solid to the liquid, and conversely from the liquid to the solid condition, possesses a given capacity for latent heat, or heat of fluidity, and that the process by which the body is heated from the combustion going on in the lungs is mainly carried on by the agency of heat rendered latent. Thus fatty matter taken in the liquid form into the stomach, and conveyed unconsumed into the extreme parts of the circulation, in being deposited there yields up an equivalent of not less than 162° of heat. Thus water, which, as the grand menstruum of the solids, must be protected by the saline substances and the albumen that it cannot be solidified even locally at any temperature above 16° Fahrenheit. Thus, and lastly for the present occasion, by their capacity for taking up the heat of fluidity and for yielding that heat up again, the blood-corpuscles become the great carriers of that caloric of the body by which all the soft parts hold and maintain their mobility and physical activity.

"But in order that the blood-corpuscles should be subjected to the influence of living combustion in the lungs, they must be brought over the pulmonic circuit in proper mechanical suspension—in other words, in a state of proper distribution; and this obtains so long as they are borne in the fibrin of the liquor sanguinis, the fibrin itself being diffused equally through the homogeneous fluid of water, saline matter, and albumen, which we call serum. The moment, therefore, there is separation of water from albumen, the moment the balance of water, albumen, fibrin, and blood-corpuscles is disturbed by the separation and abstraction of water, that moment the blood-corpuscles cease to be brought correctly to the lungs to fix caloric. As a result, there is a reduction in the amount of the caloric of fluidity that should be conveyed to the tissues, and then every ounce of water, beyond what is natural, that is conveyed from the organism carries away so much caloric at the expense of so much tissue. In fact, if it were not for the capacity of the water to abstract caloric from the tissues so as to maintain its own fluidity, the water of the tissues of the cholera patient would fall so rapidly that death would almost be instantaneous on the destruction of the homogeneousness of the blood."

3. *A System of Perivascular Canals in the Central Nervous Organs.*—The last number of the *Archives des Sciences* contains a notice of Herr HIS's dis-

covery of a peculiar series of channels which traverse the central nervous masses. He first detected them in a number of sections of the spinal cord, in which they were represented by grooves which he looked upon as opened channels. They are more distinct in the gray than in the white substance. Each groove incloses a bloodvessel, which either lies freely within it or is attached to its walls. They are abundant enough in the brain, and this circumstance explains how one is enabled to remove whole vascular networks with the forceps from the surface of the cerebrum. Herr His's injections of these spaces show the perivascular canals to lie between the nervous substance and the pia mater. He concludes that the spaces are connected with the lymphatic system, and thinks them analogous to those reservoirs which in the frog are placed between the integument and the muscles, and which almost completely separate one from the other.—*Lancet*, June 9, 1866.

4. *Termination of the Motor Nerves in the Muscles.*—The views of Dr. Beale, relative to the termination of the nerves in the muscular tissue have been pretty generally accepted in Great Britian. Most British microscopists hold with the King's College Professor in believing that the nerves have no decided termination in the muscles, but that their ultimate fibres unite in forming a network of extreme delicacy. Abroad, however, this view has met with some opposition, and especially from MM. Kuhne and Rouget, the latter of whom has just presented a memoir to the Academy of Sciences upon the above subject. M. Rouget states that the nerve-fibre ends in a sort of terminal *plate* or disk; and in answer to Dr. Beale's denial of such a mode of termination he writes: "I shall only reply, that all other observers who have devoted themselves to this subject, MM. Krause, Kühne, Waldeyer, Engelmann, and Letzerich, and still more recently, MM. Conheim and Vulpian, have all admitted the existence of the terminal plate, and its entire independence of any nervous network." M. Rouget laid before the members of the Academy some photographs of microscopic preparations of tissue, which he said demonstrated the following conclusions: (1) The terminal division of the *axis cylinder* of the motor nerve-fibre constitutes by anastomosis and fusion a terminal expansion of finely granular substance identical with that of the terminal filaments of the corpuscles of Pacini, of the ultimate nervous lamina of electric plates of fishes, &c., and in immediate contact with the contractile substance of the primitive bundle. (2) This nervous expansion is traversed in every direction by minute canals, establishing a connection between the numerous nuclei of the *plate*, and communicating probably, on the one hand, with the space intermediate between the sarcolemma and the contractile fibrillæ, and on the other hand, with the interstice between the matrix of the nervous tube and the medullary layer—an arrangement which is doubtless related to the special action of certain poisonous substances upon the terminal extremity of the motor nerves of animal life. M. Rouget's paper will be found in the *Comptes Rendus*, June 25th.—*Lancet*, July 21, 1866.

5. *Vessels and Nerves of the Ligaments and Fibro-Cartilages.*—M. Sappey, in a memoir presented to the Imperial Academy of Sciences, describes the vascular and nervous parts of the ligaments and cartilages. He says of the interarticular cartilages, those of the knee are the most abundantly supplied with nerves and vessels. The vessels run at first nearly parallel with the connective-tissue fibres; but soon they divide and subdivide and anastomose, so as to form the most exquisite reticulations, which terminate in elegant festoons. The veins follow the course of the arteries. In the fibro-cartilages of the joints the vessels pass from the periphery towards the centre; but they penetrate only to a depth of three or four millimetres. The periarticular fibro-cartilages, or *bursæ*, are still more vascular. Both these sets of tissues receive numerous nerves, which sometimes lie with the vessels, and at others pursue an independent course. The ligaments are also well supplied with vessels and nerves, especially the latter, which are more numerous than those of the skin. In the tendons the supply of nerves and vessels is less marked. As regards their nervous and vascular supplies, the tissues described in M. Sappey's memoir follow this order: (1) The

ligaments and periarticular fibro-cartilages; (2) the tendons and aponeuroses; and (3) the interarticular fibro-cartilages.—*Lancet*, July 7, 1866.

6. *Myograph.*—M. MAREY, the inventor of the sphygmograph, has devised a new instrument which he names the myograph, for determining the vibrations of muscular fibres. It is employed only in connection with the muscles of animal life, and it records graphically the vibrations of these just as the sphygmograph records pulsations. The vibrations of the fibres of muscles have already been determined by Haughton, Helmholtz, and others; but M. Marey has gone further, and, by introducing the method of autographic registration, has shown the exact nature of the influence of fatigue and disease (muscular and nervous) over these vibrations. The myograph consists of a sort of forceps, which embrace the limb experimented on, and one of whose arms rests upon the muscle whose vibrations are to be determined. This is the only movable limb of the forceps, and it is, therefore, thrown into vibrations during the contraction of the muscle. The forceps are connected with the wire of a galvanic battery, and by this means the muscle is at pleasure thrown into action. The remainder of the myograph is upon the plan of the sphygmograph, and comprises a system of levers and drums, on which the register of the vibrations is traced.—*Lancet*, July 7, 1866.

7. *Influence of Water in the Production of Milk.*—The recent experiments of M. DAMOISEAU and others, show that the abundant secretion of milk is directly dependent on the abundant ingestion of water. In former researches, which tended to prove the opposite conclusion, there was not sufficient allowance made for the quantity of water contained in the food given to the cows upon which the experiments were conducted.—*Lancet*, June 9, 1866.

8. *Structure of the Crystalline Lens.*—A very valuable paper has been published by HERR VON BECKER in the *Archiv für Opthalmologie* on the subject of the structure of the crystalline lens. The eyes he investigated were those of the calf. They were prepared by maceration for a few hours in a solution of sulphuric acid (five drops to the ounce of distilled water). The capsule of the lens, he says, at first appears to be perfectly homogeneous, but when it is examined with a sufficiently high power, it exhibits striæ that indicate a lamellar structure, which is still more marked when the capsule has undergone morbid thickening. The anterior capsule is decidedly thicker than the other. In fish and in amphibia there is less difference between the two capsules in this respect than in mammalia and birds. The difference increases with age. In a man of seventy-two years it amounted to 0.047 millimetres. The inner surface of the thickened portion of the capsule is clothed with a layer of cells, which is not epithelial only, but is in some measure composed of small rounded cells. The fibres of the lens are thus developed: The small rounded cells of the capsule arrange themselves in groups of from two to six; their nuclei increase in size, assume a linear direction, and finally the cells themselves unite, and form cylinders of a concave and jointed appearance at the surface of the lens. The development goes on actively even at birth. Numerous spaces exist between the fibres, to which Herr Becker gives the name of *interfibrillary spaces*, and asks, do they exist during life?—*Lancet*, June 9, 1866.

MATERIA MEDICA AND PHARMACY.

9. *Action of the Bromide of Potassium upon the Nervous System.*—Dr. J. CRICHTON BROWNE has subjected forty-three patients suffering from various affections of the nervous system to the action of the bromide of potassium, and from watching its effects on these patients and comparing them with the recorded experience of others, he has become convinced of its high value. He has been

led to the conclusion that the bromide acts directly as a sedative to the medulla oblongata, soothing and moderating its functions wherever these are in excess of the normal standard. This sedative influence he believes to embrace alike the impressibility and motor excitability of the organ. The medicine has been given in doses of from ten to forty grains twice or thrice a day, after meals or upon an empty stomach. The most useful results have occurred under doses of twenty to twenty-five grains twice a day.

The actions of the bromide of potassium, according to Dr. Browne, are:—

1. It mitigates those convulsive movements or spasmodic twitchings, which are the result of the rapid conversion of sensory impressions into motor impulses, or of morbid reflex action through the medulla oblongata, and it exercises a peculiar influence over the phenomena which are characteristic of epilepsy. Whether the increased excitability of the medulla oblongata is so great as to be productive of epilepsy, or so slight as to extend itself in minor spasmodic complaints, the bromide seems to exert an excellent effect on it.
2. It has a sedative effect upon the action of the heart in certain cases.
3. It lessens and mitigates that rapid and preturnatural excitement of spasm, tremor, and other outward manifestations which in some forms of nervous disease follow upon any emotional or moral disturbance.
4. It acts as an anodyne, under certain circumstances relieving hyperæsthetical sensations.
5. It promotes sleep.
6. It exercises a sedative influence over the sexual functions.
7. It exercises a beneficial influence over certain mental diseases.

"Without minutely considering here," says Dr. B., "the uses of the bromide of potassium in the treatment of insanity, I may mention that I have seen it of signal service in orectic and thymic derangements. I believe I have seen it moderate excessive manifestations of the instincts, and appetites, and afford assistance in subjugating degraded and vicious impulses and propensities. I have certainly seen it efficacious in alleviating melancholia, simple, suicidal, akinetic, hypochondriacal, sexual, emotional, etc. It is in these forms of insanity enumerated that I anticipate that it will be of most utility.

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10. *Physiological Action of Narceine.*—In a late No. of the *Journal de Chimie Médicale* there is an abstract of M. Linné's researches on the above subject, from which we perceive that the following conclusions have been arrived at: (1) Narceine is unquestionably of all the alkaloids of opium that which has the greatest narcotic power. *In the majority of cases* morphia and codeia do not produce as sound or as prolonged sleep as results from the use of narceine. (2) Narceine differs from the other alkaloids of opium in producing little perspiration, and in causing no loss of appetite or nausea. (3) So far from producing constipation of bowels, it causes relaxation, and, in large doses, actually gives rise to diarrhœa. (4) It not only produces sleep, but diminishes pain. (5) It has one peculiar action: it suppresses the flow of urine. For this reason M. Linné thinks it might be advantageously employed in cases of nocturnal incontinence of urine amongst children. But it seems to us that, until its action can be shown to be on the bladder rather than on the kidneys, its employment in such cases would be highly improper.—*Lancet*, June 9, 1866.

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11. *Therapeutic Uses of Oxygen.*—M. Demarquay, who has devoted much attention to the use of oxygen inhalation in medicine, says, in speaking of its therapeutic indications, that, in the early stage of phthisis, when there is no fever, and no fear of exciting local action, when the patient is becoming emaciated, and the emaciation is increased by persistent dyspepsia, oxygen may have a salutary influence in modifying the state of the constitution and sustaining the organism. Asthenia is the disease in which oxygen has been given by preference; of twenty-two patients treated by Beddoes, ten were cured, and nine relieved. But the employment of oxygen in asthenia meets with numerous contraindications. Oxygen renders incontestable service in essential anæmia. It is specially indicated in that form of chlorosis of young girls which is characterized by obstinate anorexia; in the anæmia of convalescents, and in the

anæmia, often severe, of newly-delivered females. The inhalation of oxygen is also successful in anæmia arising from hemorrhage or from fatigue, and is also a very energetic remedy in the debility produced by prolonged suppuration; it stimulates the appetite, sustains the powers of the patient, and enables him to attain to recovery. In diabetes, under the influence of oxygen inhalation, the quantity of sugar contained in the urine is remarkably diminished. In surgery, oxygen stimulates weak and ill conditioned ulcers, and accelerates the production of granulations in cicatrizing wounds. In senile gangrene, as long as the circulation continues in the artery of the foot, oxygen is, according to the observations of MM. Laugier, Demarquay, and Maurice Reynaud, the only remedy which in advanced cases affords a chance of recovery.—*Brit. Med. Journ.*, May 19, 1866, from *Gaz. Méd. de Paris*, 14 April, 1866.

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12. *Mudar, a Substitute for Ipecacuanha in the Treatment of Dysentery.*—Mr. J. J. DURANT states (*Indian Med. Gazette*, May, 1866), that he has found the powder of the bark of the root of mudar (*Calotropis gigantea*) an excellent substitute for ipecacuanha in the treatment of dysentery amongst the native population. In every acute case in which he prescribed mudar it either effected a complete cure in a few days, or at once changed the character of the disease from bloody and mucous to bilious diarrhœa. He administers it in similar doses to what are usually given of ipecacuanha, never beginning with less than one scruple, and seldom going beyond one drachm. He usually gives it alone, but when a weak stomach is suspected in the patient he combines it with carbonate of soda, creasote, bismuth, prussic acid, &c. Like ipecacuanha, mudar, in large doses, is a reliable cholagogue; it is also a sedative to the muscular fibres of the intestines, particularly of the rectum and colon, rapidly allaying all pain, tenesmus, and irritation, and putting a stop to dysenteric action. Its most marked effect is the production of a copious flow of bile, which follows its use in about twenty-four hours.

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13. *Wheat Phosphates.*—Dr. TILBURY FOX justly states that "the various forms of infant's food are, in the great majority of instances simply and purely starch, the central portions of the cereals consisting entirely of the latter product; these foods do not deserve the name of, and *are not flours;* to call them flours is nothing more or less than *fraud.* Now, inasmuch as the starchy element is not the assimilative nor the flesh forming, but the heat and fat producing principle, all our past efforts in securing a nice white flour have been antagonistic to the possession of nutritive material, and actually the very desirable part of the grain contained in the bran—viz., the organized phosphates and other principles, have been deliberately rejected. Seconds flour makes a much more wholesome bread than that of the first quality."

The importance of a due supply of phosphates in health and disease has been recognized, and Dr. Fox's experience teaches him that there is something essentially special in the organized phosphates—those, in fact, *which have been formed by passing through a living organism* (in nature's own laboratory)—as compared with artificially prepared phosphates. It is not the amount, but the kind exhibited that produces the good result. No simple mixture is in any way a substitute. It is not at all unlikely that the cerealin, of which little is known, but which is associated with the phosphates in the bran, and has an action similar to pepsin, may conduce to the beneficial result.

The organized phosphates aid the assimilative function and promote digestion.

The mode of preparing them as given by Dr. Fox is "to make a decoction of well-selected bran, carefully evaporate in a water bath, mix the residue with sugar, and reduce to powder. It may be used in the place of sugar, a teaspoonful or less being added two or three times a-day to the child's food. The cases in which its use is chiefly indicated are those amongst the young, in whom the assimilative function is at fault. I can speak very strongly in cases which belong to my own particular specialty—diseases of the skin. Eruptive diseases of the scalp in infants are most frequently associated with faulty assimilation. Here the wheat phosphates act marvellously well. But in rickets, in marasmus, chronic diarrhœa, and impaired nutrition of all kinds, I believe them to be most

invaluable adjuncts. Pallid children pick up tone, colour, and flesh; worms disappear; intestinal irritation subsides; the secretions become healthy; and disease goes. I lay great stress on the phosphates under notice in their character as *organized products* as greatly helping assimilation of food and medicinal agents, and believe them to be the most preferable form of phosphates, especially for the young."—*Med. Times and Gaz.*, March 17, 1866.

14. *Port Royal Senna.*—In the Pharmaceutical Society, the Chairman called the attention of the meeting to a specimen of *Port Royal Senna*, brought to England by Dr. Bowerbank; and Dr. Tilbury Fox stated that Dr. Bowerbank had used the senna in his practice for thirty years, and found it preferable to East Indian and Alexandrian sennas. It was less disagreeable to the palate, excited no nausea, and produced no griping. The infusion tasted something like tea, and children drank it readily. Professor Bentley said that the specimen consisted of leaves of *Cassia obovata*, a cultivated variety of the plant, which was originally introduced from Africa. It was mentioned by several writers on West Indian plants, under the names of Italian senna and Cassia Portugalia. It was said by Sloane to produce much griping. He believed that it was less active than East Indian and Alexandrian senna. Mr. Cook stated that the plant grew wild in the hedges of the West Indies.—*Brit. Med. Journ.*, March 31, from *Chemical News.*

15. *Use and Abuse of Poultices.*—In his lectures recently delivered at the College of Physicians, Dr. Richardson made the following remarks on the subject of poultices:—

The application of moist heat in the form of poultice to suppurating parts requires, I think, remodelling, in order that it may be placed on a true scientific basis. I am afraid that the common recommendation, "You must put on a poultice," is too often among us all an easy way of doing something about which we are not quite sure, and concerning which it were too much trouble to think long. From what I have recently observed, I fear that mischief is often done by a poultice, which might well be avoided. The people have always a view, that a poultice is applied to "draw," as they say—a term in truth which, though very unsophisticated, is in a sense a good term, for it means what it says. The question for us is, whether it be sound practice to carry out as a general rule the "drawing" process, either by fomentation or by poultice.

When a part is disposed to suppurate, the first step in the series of changes is an increased flow of blood through the capillary surface, followed by obstruction, and thereupon by an excess of sensible heat derived from the friction that is set up. Then follows transudation of liquor sanguinis into the connective tissue, and its transformation, under the influence of heat, into what is called purulent fluid. When to the part in this state we apply moist heat, we quicken suppuration, mainly by upholding the temperature: at the same time, we secure the transference of water from the moist surface into the fluids of the inflamed part, by which tension of tissues is produced, and in the end yielding of tissue at the weakest point.

When the suppurating surface is circumscribed, the rapid induction of the process may be attended with little injury; but when the surface is large and when the exuded fluid is thrown into loose structures where it can burrow readily, the practice, I think, cannot be good to extend the mischief. Hence, in the treatment of carbuncle and phlegmonous erysipelas, it cannot, I opine, be sound practice in the early stage to apply moist heat. Experience also, not less than principle, warrants this conclusion. In cases of carbuncle especially, I have of late altogether avoided the application of moist heat in the early stages; and, I feel assured, with good results.

But when, in the course of local disease, suppuration is actively established, and is naturally circumscribed; when the increased temperature of the part has fallen to or below the natural temperature—then the value of moist heat comes on with full force; then the tension which is exerted determines the escape of fluid at the weakest point of the sorrounding tissue, and, when the fluid escapes

or is liberated by the knife, the escape for a long period is aided by the application of moist heat.

The continued application of moist heat for a long time after the escape of purulent fluid is again, I conceive, indifferent practice. It sustains discharge; it sets up unhealthy decomposition of fluids; it produces a thickened soddened condition of skin, most favourable to the production of sinus; and it retards recovery. When a surface is freely open, and suppurating, dry and not moist heat is the remedy. We are in want in these cases of a simple invention; we require something which we can apply as readily as a poultice which shall keep up the temperature of the part, and at the same time take up moisture, and gently desiccate, without injuring the tissues.—*Brit. Med. Journ.*, May 12, 1866.

MEDICAL PATHOLOGY AND THERAPEUTICS, AND PRACTICAL MEDICINE.

16. *Microscopical Researches on Cholera.*—The most important recent contribution to the pathology of cholera is the series of observations upon the morbid changes which have occurred in cholera made with the aid of the highest powers and new methods of investigation by Dr. L. S. BEALE. This eminent physiologist and skilful microscopist has entered upon this inquiry, he states, as a scientific observer who has neither formed nor adopted any views concerning the nature or treatment of the disease.

"In this inquiry," he says, "it seems to me desirable to start from the alimentary canal. Every one who has seen cholera has been struck by the remarkable characters of the matter discharged from the intestinal tube, and those who have made post-mortems are familiar with the fact that the small intestines almost always contain a considerable quantity of pale, almost colourless gruel, rice, or cream-like matter. This has been proved to consist almost entirely of columnar epithelium, and in many cases large flakes can be found, consisting of several uninjured epithelial sheaths of the villi. I have often found such sheaths in the stools in previous epidemics, and probably every one who has carefully observed the disease will have inclined towards the opinion that in bad cases it is probable that almost every villus, from the pylorus to the ileo-cæcal valve, has been stripped of its epithelial coating during life.

The alteration in the apparatus concerned in the absorption of all nutrient matters from the intestinal canal, and the changes accompanying it and preceding it, are probably sufficient to account for death by collapse. Most important, therefore, it is to ascertain, if possible, the several phenomena of which this denudation of epithelium is the climax, and the order in which they occur. These important organs, the villi, are, in a very bad case, all, or nearly all, left bare, and a very essential part of what constitutes the absorbing apparatus is completely destroyed. If only a considerable portion of a villus was denuded, reparation might doubtless occur by new growth from the cells which remained, but if the villus was entirely stripped, it is more probable that it would waste, and its place be at length occupied by a new one, which would grow from its base, than that epithelium would grow anew from its bare surface. It is probable that the extent of this process of denudation determines the severity or mildness of the attack. If the great majority of the villi have suffered, it is scarcely reasonable to consider recovery more probable than it would be after a very extensive burn or scald. We shall have to inquire what is the proximate cause of the denuding process? Why does the epithelium drop off? What circumstances cause it to become detached? The process may be due to violent contraction of the muscular fibres of the villi and the retraction of the villus within it sheath; but although, no doubt, contraction occurs, it is scarcely probable that the villi would be so generally and completely stripped as they are in severe cases. It seems more probable that the epithelium may become detached in consequence of the almost complete cessation of the circulation in

the capillaries beneath, but the death of the cells may occur in consequence of their being exposed to the influence of certain matters in the intestine or in the blood, in which case they would simply fall off. These and many more hypotheses will have to be considered in the hope of finding the true explanation of the fact.

It ought not, I think, to be too hastily concluded that this abundant removal of epithelium is an indication of the occurrence of active *elimination* from the intestinal surface. For, in the first place, it must be remembered that the villi are not, in their normal state, organs of *secretion* or *elimination*, but active organs of *absorption;* while, on the other hand, Lieberkuhn's follicles, which open in the intervals between the bases of the villi, are secreting organs. Now these follicles, so far from being denuded, are choked with epithelium. It is possible, however, that there may have been a tendency upon the part of these cells to separate matter from the blood, but it seems improbable that the columnar cells which form the bulk of the cellular elements of the contents of the small intestine, and which unquestionably came from the villi, should have been engaged in such an office. Secondly, I would remark that the pabulum passes through the columnar cell in a direction *from* its free towards its attached surface, or *from the intestine towards the blood.* If, therefore, it eliminates or separates anything from the blood, the flow must take place through it in a direction the very opposite of that which is constant during its life. Is it not improbable that this should be the case? In short, it seems to me that evidence in favour of the view that the removal of the epithelium from the villi is an eliminative act is still wanting. By the denudation a raw surface becomes exposed, just as in the case of the cutaneous surface after a burn or scald, except that the villi are completely bared, which is not the case with the skin. No one would argue that the elevation of the superficial layers of the cuticle and the effusion of serum beneath consequent upon a burn resulted from elimination. We are to some extent acquainted with the several steps of the latter process, but we have not as yet learned much concerning the former.

The removal of the columnar epithelium from the villi, and the consequent destruction of the mechanism connected with absorption, are broad facts in cholera which deserve the most minute and careful study. We might well consider how this denudation may be prevented or retarded, and, having taken place, what fluids should be brought in contact with the naked surface—oily fluids, fluids containing salt syrup or glycerine, so as to make them of about the specific gravity of the serum, or ordinary serum itself, which last would probably be most efficacious—or whether it would not be better, until we know more of the matter, to let the denuded villi remain perfectly quiet, and allow the small intestine to rest, in the hope that the damage may be repaired. But is it not reasonable to hope that a thoroughly minute investigation into the circumstances which probably immediately precede this denudation of epithelium would enable us to form a notion of its nature, and to adopt means which were likely to restrain it? A knowledge of the changes occurring after the denudation and destruction of many villi will probably teach us much concerning the nature of "secondary fever," and enable us to place the patient under conditions most favourable to his recovery. The consideration of the mere fact of there being a raw denuded surface throughout a considerable extent of the alimentary canal suggests the propriety of not introducing anything into the intestines. The question concerning the alteration in the villi is a most interesting one, and it is worth while to spend time in searching for new facts, and in trying new experiments which may help us to answer it. But the subject is a very extensive one, and has many ramifications, each of which must be carefully considered in detail.

Remarkable changes have occurred in the smaller vessels, especially in the capillaries and small veins of the villi and submucous tissue, and these changes can be readily demonstrated. The blood-corpuscles appear to have in great measure been destroyed in the smaller vessels, and in their place are seen clots containing blood-colouring matter, minute granules, and small masses of germinal matter evidently undergoing active multiplication, but the nature of which has yet to be studied. Some of the arteries are contracted, but here and there

small clots destitute of blood-corpuscles may be seen at intervals. Drawings of these will be published.

On the other hand, the nerves and the ganglia, so numerous between the muscular and mucous coats of the small intestine, exhibit a natural appearance, so that I should not be able to distinguish a ganglion taken from a cholera victim from one taken from a perfectly healthy person of the same age whose life was destroyed by accident. The nerves and ganglia, and the tissues for a short distance around the smaller vessels, are, in many situations, stained with altered and dissolved blood-colouring matter."—*Med. Times and Gaz.*, Aug. 4, 1866.

In a second article (*Med. Times and Gazette*, Aug. 18th), Dr. BEALE states that the columnar epithelial cells found in great number in the rice-water evacuations and small intestine after death from cholera, do not always exhibit the same characters, nor are they of the same size in every case.

He adds: "In almost all the cases of cholera I have yet examined there is evidence of chronic structural changes in the *tissues* of the intestines, and I think we shall be led to conclude that in most of the cholera victims important morbid alterations have been going on for months, and in some instances for years, before death. In some cases it is probable that, had the individual escaped cholera, he must have succumbed to some other malady within a short period of time. The columnar epithelial cells often exhibit evidence of chronic change; they seem to be stunted, and in many instances the nuclei are much smaller than in health. In the intervals between their attached extremities one fails to find those smaller and younger cells which in the healthy state gradually grow up to take the place of those cells which are removed and give origin to new cells, which in their turn become developed. So also it is to be observed that the masses of germinal matter so numerous near the surface of the healthy villus are almost absent in many of these cases of cholera. And there are other and very striking changes in the structure of the affected villi which I shall describe fully in other communications."

In one case, that of a child fifteen months old, Dr. B. found the epithelial sheaths of the villi very distinct and perfect, but the cells did not exhibit the characters seen in other cases. "They contained numerous oil-globules, some of which were of considerable size—a fact which perhaps justifies the inference that these particular cells were active and concerned in absorption shortly before death, which certainly is not usually the case in cholera. The above inference is confirmed by the characters of the villi existing in this particular instance. In most cases the fresh cells seem to be almost destitute of oil-globules, and many present a shrivelled appearance, as if they had not been very active for a long time before death. There seems, indeed, to be the same sort of difference between some of these cells in cholera and healthy columnar epithelial cells, that is observed between the epithelium of a cirrhose and that of a healthy liver or kidney." * * *

"Amongst the epithelial cells and upon their surfaces, if not in their substance, are multitudes of bacteria. Bacteria are found in the dejections during life, in the vomit, and in every part of the alimentary canal two hours after death.

"It is probable that these organisms are developed in the intestine in vast numbers during life." * * *

"The falling off of the epithelial cells cannot be attributed to the influence of bacteria, nor is it probable that these organisms are concerned in the production of cholera. Bacteria are found often enough in undigested or in imperfectly digested food. In dyspeptic infants they occur in vast numbers in every part of the alimentary canal; and in temporary stomach derangement the matters rejected by the stomach or passed per anum contain them in enormous quantity. They have been observed by Dr. Gibb even in milk immediately it was removed from the breast of the mother, and must have been developed while the milk yet remained in the mammary gland. They are always present in the fluids of the mouth, and are not uncommon in the contents of the stomach, though it is doubtful if they multiply in a perfectly healthy condition of the gastric mucous membrane. It is not very surprising that bacteria should be present in the cells of columnar epithelium in certain cases, seeing that their germs are always present in the old cells of squamous epithelium in the mouth.

They invade these columnar cells from without, and live at their expense, just as they invade the epithelial cells of the tongue, and as simple fungi invade the cells of higher plants and animals when these cells begin to decay or lose through disease their healthy power of resisting invasion.

"Bacteria are constantly found in every part of the living body where a tissue is no longer permeated by the fluids whose office it is to maintain it in a state of integrity. Soon after the currents of fluid have ceased, especially where the organic material is soft and easily decomposed, bacteria make their appearance, and grow and multiply rapidly. Nor is there a tissue or organ in the inmost parts of the body in which these organisms may not within the course of a few hours make their appearance. The germs are there; but so long as the normal state of things continues, these germs are prevented from being developed.

"These simple living organisms are without doubt destroyed in the healthy condition, although their germs may resist destruction. If the latter were to get into the healthy blood, they would not multiply, but towards the close of many exhausting diseases, both in animals and man, after the blood has undergone important changes, they are found in great numbers. It is, however, doubtful if in any case they can be regarded as the cause of the disease or the *materies morbi*, and it is far more probable that a change takes place before these organisms can multiply in the blood, and that a condition of things becomes established which is favourable to their growth and multiplication.

"There is then, I think, no good reason for supposing that the bacteria in such numbers in the alimentary canal in cholera have anything to do with this disease or with the falling off of epithelium from the intestinal or other mucous membranes. Bacteria are developed in organic matter which is not traversed and protected by the normal fluids of the body, and they invade the cells and textures in cholera after these cells and textures have undergone serious prior changes, just as they would invade textures removed from the body altogether. Nor would it be in accordance with known facts to infer that cholera was due to the invasion of some peculiar form or species of bacterium." * * *

"Cholera seems to be so constantly associated with the removal of columnar epithelium from the villi, that we have been led to look upon this as one of the *essential* phenomena of the disease. Although there may be no actual diarrhœa, this epithelium is found in quantity in the intestine after death. It may be said that this removal of epithelium occurs immediately after or only just before death, but the great number of columnar epithelial cells and entire sheaths of the villi so frequently found in the rice-water evacuation, giving to it its peculiar character, proves that such a notion is not tenable. Can cholera exist without the villi being denuded of their epithelium—is a question which, as far as I know, has not yet been answered, but which must be answered before we can form a correct notion of the nature of this most wonderful disease. I do not think there is any other morbid condition in which this striking change is observed—at any rate, to the extent or with the frequency it is met with in cholera. It seems, however, likely, that where those changes in the blood occur very quickly indeed, so as to cause death by sudden stagnation of the blood in the capillaries of important organs, there might not be time even for the removal of the epithelium from the villi, just as we may have death from smallpox or scarlatina without any eruption.

"With reference to the denudation of the villi, it must be borne in mind that the throwing off of epithelium is not confined to the villi of the intestine, or to that of the intestinal mucous membrane generally. The process affects the mucous membrane of the gall-bladder and larger gall-ducts; that of the bladder; ureters, and pelvis of the kidneys, as well as that of the Fallopian tubes, uterus, and vagina. In short, there seems a tendency to the removal of epithelium from the surface of all the soft, moist mucous membranes; not, it must be remembered, of the epithelium which is specially concerned in *elimination*, but rather of that which lines the *ducts* of glands and cavities which may be included in the category of the ductal portion of the different secreting glands.

"On the other hand, there is no evidence of the increased formation or more rapid removal of the secreting epithelium in the various glandular organs. The follicles of the mucous membrane of the stomach and intestine, those of the

salivary glands and pancreas, the tubes of the liver, kidney, and other glands still retain their epithelium; nor have I been able to demonstrate in these varieties of glandular epithelium any appearances peculiar to cholera. Indeed, so far as I have yet been able to observe, it would be extremely difficult to distinguish many secreting cells taken from the bodies of cholera victims from perfectly healthy cells."

17. *Internal Temperature in Cholera.*—Dr. WEBER, of the German Hospital, Dalston, states (*Med. Times and Gaz.*, Sept. 1) that he has found in several cases of cholera the temperature of the rectum to be more or less above the average of health; that it had been in one case of severe collapse as high as 103°, while in the axilla at the same time it scarcely exceeded 95°; that with progressing recovery, the temperature in the rectum had decreased, while that in the axilla had increased.

18. *Aphasia with Right Hemiplegia, Softening in the Island of Reil, and External Frontal Convolution.*—Dr. SANDERS exhibited to the Edinburgh Medico-Chirurgical Society a drawing taken by Mr. Strethill Wright, of the base of the brain in a case of aphasia, recently fatal. The patient, Robina S., a female aged 50, had been under observation in the Royal Infirmary since 23d August last, and died on 17th April. She had been taken ill three days before admission. She was hemiplegic on the right side, and had entirely lost the power of speech, although her intelligence remained. She could only mumble inarticulately; no single word, not even "Yes," or "No," could be made out. Her writing consisted of unintelligible scratches. She was evidently anxious to express herself, and wept at her failure. Curiously, she could by signs make her husband understand her, and, by the nurse's report, they contrived to quarrel. There was no paralysis of the tongue or larynx; the hemiplegia affected chiefly the arm (which afterwards became rigid in the flexed position), also the leg and face on the right side, both of which, however, recovered a considerable amount of voluntary motion. She died of exhaustion, bedsores, and, ultimately, pneumonia. At the autopsy, the arteries at the base of the brain were found highly atheromatous. On the left hemisphere the principal lesion was softening, occupying the anterior and external portion of the island of Reil, and extending outwards and forwards into the under surface of the posterior part of the external frontal convolution (Broca's localization), which was affected, however, only to a small extent. The softening also penetrated inwards to the external and anterior part of the corpus striatum. There was also a small separate softening at the posterior part of the corpus striatum. There were also small detached softened portions in the white matter above and also behind the left ventricle. No lesion of the right hemisphere. Mr. Turner examined the brain along with Dr. S. This case partly supported, partly differed from, Broca's views. It suggested the island of Reil as a seat of the lesion in aphasia, the lobule of the island being of great importance in the conformation of the brain. Dr. S. mentioned, that since his case of aphasia had appeared in the *Edinburgh Medical Journal* of March, he had been asked to see three cases, and had received from friends information in regard to other three cases of aphasia; in all of the six cases, the aphasia was associated with hemiplegia, always of the right side of the body.—*Edinburgh Med. Journ.*, June, 1866.

19. *Atrophy and Degeneration of the Muscles of the Upper and Lower Extremities from Disease of the Spinal Cord.*—The following case of this was communicated to the Royal Med. and Chir. Soc. (June 12, 1866) by Mr. GEO. L. COOPER:—

J. J., aged 41 years, married, but his wife had no family; was much exposed to the weather in his daily occupation, at the same time had been a man of intemperate habits, and the subject of a long chronic cough. He was admitted under the care of the Author at the Bloomsbury Dispensary on February 14, and died on the 26th. He suffered from complete paralysis of the upper and lower extremities, with atrophy of the muscles of these parts. The symptoms were slow, but progressive. They commenced in the hands and feet, and

extended to the arms and legs, and ended in total paralysis. His cough was severe, with purulent expectoration, to the time of his death, which took place on February 26. The post-mortem showed much distension of the coverings of the cord from fluid, with congestion of the pia mater in the cervical region, and considerable softening in the substance of the white columns. At the commencement of the lower third in the dorsal region the central gray substance contained a large dilated vessel on each side, surrounded by extravasated blood-globules; and the extremities of the posterior cornua were highly vascular, as also in certain parts of the gray substance there were patches of extravasated blood.—*Med. Times and Gaz.*, July 21, 1866.

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20. *Mode of Distinguishing between Nervous Idiopathic Albuminuria and the Albuminuria of Diseased Kidneys.*—The principle upon which M. Corlieu founds the test by which he distinguishes between these two forms is, that when the kidneys are healthy the urine possesses the smell of odorous substances introduced into the system. He says that if such substances as cubebs, turpentine, &c., be ingested, they will give their characteristic odour to the urine, in cases of albuminuria, provided the kidneys be healthy; but if the kidneys be diseased, as in nephritis, the odour of these substances cannot be detected, even though they have been previously introduced into the system.—*Lancet*, July 9, 1866.

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21. *Addison's Disease.*—Dr. Greenhow exhibited for Dr. Dickinson two supra-renal capsules infiltrated with cancer. They had been taken from the body of a man, aged 56, who had presented no discolouration of skin nor any of the constitutional symptoms of Addison's disease. Malignant disease of the spine was diagnosed during life, and on post-mortem examination cancer of the lumbar vertebræ, pancreas, liver, heart, and other organs was found, together with cancer of the supra-renal capsules. Dr. Greenhow likewise exhibited the supra-renal capsules, tongue, penis, and scrotum taken from the body of a man aged 55. Addison's disease had been diagnosed on the day of the patient's admission into hospital. The constitutional symptoms were characteristic, and besides slight general discolouration of skin there was deep discolouration of some cicatrices of burns, and also of penis and scrotum, and the tongue presented on its upper surface round the free edge irregular purplish stains. On microscopical examination the pigment causing these stains was found deposited in the papillæ in brown masses, the superficial layer of epithelium remaining uncoloured. The supra-renal capsules had undergone the peculiar morbid change usual in Addison's disease. In the lungs and other organs there were also tubercular deposits. Dr. Greenhow said that these two cases were good illustrations of the difference in the effects produced on the general health by different diseases of the supra-renal capsules. A discussion two years before at the Pathological Society, showing that doubts were still entertained as to the reality of Addison's discovery, and that these doubts were mainly fostered by the confusion of genuine and spurious cases, had induced him (Dr. Greenhow) to abstract from the British and Irish journals for the purpose of analysis all the published cases not of Addison's disease only, but of cancerous and other diseases of the capsules, and also of bronzed-skin without any disease of the supra-renal capsules. Subsequently his attention had been drawn to treatises on the subject by M. Virchow and M. L. Martineau, and he had translated from the original sources all the foreign cases quoted in their writings. In all he had collected 195 cases, which he had carefully analyzed, and had found that in 127 the supra-renal capsules had undergone the particular morbid change characteristic of Addison's disease. In the other 68 cases the capsules were either healthy or had undergone cancerous or some other morbid change, or the change in them was too obscurely described to enable him to determine its nature. With a few explainable exceptions, none of these 68 cases presented either the constitutional symptoms of the peculiar discolouration characteristic of Addison's disease. On the contrary, among the 127 genuine cases, 95 presented either well-marked constitutional symptoms or characteristic discolouration of skin, and 72 of these presented both. In 20 cases some of the constitutional symptoms or some dis-

colouration of skin existed, and in many instances both, leaving only 12 out of the 127 cases which presented neither any characteristic symptoms nor any discolouration of skin. These 12 cases were all among those complicated with advanced tuberculosis or with other serious organic disease, which appeared to be the causes of death rather than the coexisting disease in the supra-renal capsules. On the other hand, only 5 of the 95 cases presenting characteristic symptoms or discolouration were found among the number complicated with serious non-tubercular diseases, and not one among those complicated with advanced phthisis. These facts seemed to be a sufficient refutation of the theory current abroad that the discolouration of skin peculiar to Addison's disease is due, not to the morbid change in the capsules, but to the general tuberculosis frequently associated with it. At the same time his (Dr. G.'s) analysis of the 127 genuine cases showed that while 46 cases were reported as entirely or virtually uncomplicated, and 16 as complicated with other serious diseases without tubercle, no less than 65, or an absolute majority of the whole number, were complicated with tubercular disease of lungs or other organs, in all gradations of development; so that it was impossible to avoid the conclusion of a very intimate relation between Addison's disease and the tubercular diathesis.

Dr. Quain said that he would wish to hear from Dr. Greenhow a clear definition of what he meant by the term "Addison's disease." The statistics quoted included a certain number of cases of bronzed skin without any disease of the supra-renal capsules, and a still larger number of cases in which there was more or less disease of the capsules and no bronzing of the skin at all. It did not seem altogether philosophical to take these two conditions and to say that it was their coexistence which alone constituted the disease. Dr. Quain then gave the particulars of an interesting case of fatal anæmia in a young gentleman, which he had seen with Dr. Addison, Dr. Bright, and Dr. Williams. It was one of the first two or three cases which had led Dr. Addison to state his views on the subject. In that case there was a deep ash-coloured pallor of the skin; the capsules were small, but not diseased. Dr. Quain thought there was still much room for investigating the character of the disease.

Dr. Greenhow said in reply that the cases collected by him were not of Addison's disease only, but of all diseases whatever of the supar-renal capsules which he had been able to find published from the time of Addison's discovery up to the end of 1865. He had only abstained from giving the well-known description of Addison's disease because he desired to be brief; but he thought it might be clearly defined as a particular lesion of the supra-renal capsules, manifested during life by a certain train of constitutional symptoms attended almost always by a characteristic discolouration of skin. No doubt his collection included a few cases of bronzed skin without any disease of capsules, but the bronzing was not the discolouration characteristic of Addison's disease. It included also a certain number of cases in which the capsules had been diseased without any discolouration of skin; but, with one or two exceptions, the disease either was not Addison's, or, being Addison's, it had been masked by some other predominant disease which appeared to have been the cause of death. As Mr. Hutchinson had suggested, when the discolouration was altogether absent, death had probably taken place at an early period of the disease. As regarded the relation between the symptoms and discolouration of Addison's disease on the one hand the characteristic change in the capsules on the other, he had no more doubt of its existence than he had of the existence of a relation between incompetency of the mitral valve or of a cavity in the lungs and the physical signs of these lesions during life. He had at present three cases of Addison's disease under observation, and he was bold enough to say that he should be quite willing to leave the question of the reality of Addison's discovery to be determined by the result of the post-mortem examination in any one of the three.—*Med. Times and Gaz.*, May 12, 1866.

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22. *Influence of Sex and Age in Determining the Liability to Asthma.*—Dr. HYDE SALTER has preserved notes of upwards of one hundred and fifty cases of asthma, which have come under his observation since the publication of his elaborate work on that disease, and tabulated them. He has been able from

these to throw light on many points in relation both to the clinical phenomena and treatment of that affection.

1. In regard to *sex*. Of 153 cases 51 were females and 102 were males, showing the latter to be more liable to the disease than the former, in the proportion of *two* to *one*.

2. In regard to the time of life at which asthma makes its appearance, Dr. S.'s cases show that:—

1st. That the time of life the most prolific of asthma is the time of measles, of whooping-cough, and of infantile bronchitis.

2d. That adolescence furnishes comparatively few cases, because the diseases of childhood, so apt to lay the foundation of it, are over, while the wear and tear and hardships of life, and the deterioration of the body produced by them and by time, have not commenced.

3d. That from this time exposure and hardship and time begin to tell, and show their influence by the increasing asthma rate reaching its maximum at middle life. But, it may be asked, why should the tendency for asthma to show itself increase up to forty, and then diminish? Why should it not go on increasing as life advances, especially as we know that the tendency of catarrhal and other agencies to produce inflammatory conditions of the respiratory mucous membrane does increase up to the very end of life?

This brings me to the fourth point, which is this: That this diminishing probability of asthma making its first appearance after middle life shows that it does not follow the same law as bronchitis, and that there is something necessary for its development besides vascular change in the bronchial tubes and other organic lung mischief. This other thing is doubtless the asthmatic tendency or idiosyncrasy; and the way in which the necessity of the asthmatic idiosyncrasy for the production of the disease accounts for the diminishing probability, as life advances, of its making its first appearance is this: As every year is added, an individual is decreasingly likely to be exposed *for the first time* to the exciting cause of the disease; if any one has the predisposing cause—the asthmatic tendency—within him, it is not likely he will travel far through life without the exciting cause presenting itself and bringing the disease into activity, and those only can reach advanced life without becoming asthmatic in whom either the asthmatic tendency is *nil* or feeble, or who have fortuitously escaped circumstances calculated to call it into activity. Such a number must, according to the doctrine of chances, be a constantly decreasing series. The diminishing number of cases is, in fact, an exact measure of the diminishing probability of a person with the asthmatic tendency postponing his first exposure to exciting causes to so late a date.

There is nothing in relation to asthma about which more misconception prevails than the time of life at which it is apt to occur. It is commonly thought to be a disease of old age, and we frequently hear the expression "as asthmatic as an old man." I believe there are two reasons for this error. One, that asthma, if it is not lost comparatively early in life, or if it comes on in middle life, is generally never lost, and therefore exists in old age; and thus many old people are truly asthmatic simply because they have never ceased to be so. The other reason is that chronic bronchitis—undoubtedly a disease of advanced life—is often mistaken for asthma: an old man coughs and wheezes and spits, and is said to have the asthma; but he has really chronic bronchitis; and although the bronchitis may have a little bronchial spasm superadded to it, or even a great deal, still it is essentially and substantively bronchitis.

3. *Duration.*—The longest time that asthma had existed in any of Dr. S.'s cases was sixty-four years. This period was reached in two instances; in one case the patient's age was sixty-nine, and he had become asthmatic at five; the other was seventy years old, and the asthma began at six.

There is no rule that the oldest cases have had the asthma the longest or the youngest the shortest time. Cases of the same age will have had their asthma very different times, while cases of equal standing will be found at various ages. Thus two of my cases aged seventy years had had their asthma one a year and one sixty-four years; while a third of the same age had had it just half his life, or thirty-five years. Again, two of my cases of equal standing,

both having had asthma twelve years, were one aged sixty-nine, and the other fifteen—one an old man and the other a young girl—yet their asthmatic age was the same. In this way there is every variety—no rule. Twenty-seven of my cases were upwards of twenty years' standing, and of these, two had suffered from asthma thirty-four years, two thirty-five years, one thirty-seven, one thirty-nine, one forty-three, two forty-five, one fifty-three, and two sixty-four. Such numbers as these show how little tendency the disease has to shorten life.—*Lancet*, July 28, 1866.

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23. *Treatment of Delirium Tremens.*—Prof. GEO. JOHNSON, in a clinical lecture (*Lancet*, April 28th, 1866), expresses the following views as to the main points to be attended to in the treatment of delirium tremens, and the peculiar dangers to be guarded against:—

"First, bearing in mind the tendency to suicide, the patient must be constantly and carefully watched by a judicious attendant who has the power to exercise some moral control over him. The doors and windows should be secured, and razors, knives, and other means of mischief, put out of sight and reach. He should be kept quiet and undisturbed by noise or excess of light. It is better, if possible, to avoid direct physical restraint. If the patient be violent and difficult to control, secure the services of two attendants rather than have recourse to a strait-waistcoat. I have known more than one instance of sudden death from exhaustion induced by violent struggling against the restraint of the strait-waistcoat, and I have also known more than one instance of fatal exhaustion from struggling with injudicious attendants. Not long since a medical friend called one morning and desired me to go with him immediately to see a publican whom he had just before seen with an attack of delirium tremens. On entering the room we found the patient gasping for breath and evidently dying; and we learnt that immediately after my friend had left his patient, less than half an hour before, he got out of bed and wished to leave the room. Three strong men who were present resisted his attempt to go out; a struggle ensued, and in the midst of it he suddenly fell exhausted as we saw him, and he quickly ceased to breathe. You see, then, how great is the risk resulting from violent exertion on the part of these patients, and how important it is to avoid any restraint which is likely to provoke a struggle. In some instances a patient who cannot otherwise be kept in bed will remain perfectly quiet under the restraint of the waistcoat; but while he is thus restrained he must on no account be left alone. He may begin to struggle at any moment, and this struggle may cause rapid and fatal exhaustion.

"To sum up, then, what I have said on the subject of restraint, the guiding principle is to prevent any violent exertion on the part of the patient—any struggle either with the strait-waistcoat or with the attendants. A padded room, when it can be had, is the safest and most effectual means of restraint for a violent patient.

"Having insured the safe custody of the patient, we have next to consider the method of treatment. Now, in the first place, bear in mind that delirium tremens is one of those diseases from which recovery may take place without any assistance from drugs. Medicines are of great use in the treatment; but they are not essential. It is, however, of essential importance that the delirious patient should be *fed*. The history of the disease teaches us that the immediate cause of the delirium is the exhaustion consequent on a defect of wholesome nutriment; and, until this defect be supplied, all attempts to procure the wished-for sleep, which is so generally followed by a cessation of the excitement, are often useless and worse than useless.

"Whatever else you do or leave undone, never neglect to feed a delirious patient. If he will take food when he first comes under treatment, give it immediately, and let it be repeated as soon as he will take it. If there be, as there often is, a disinclination for food, with nausea and a coated tongue, an emetic of ipecacuanha, followed by a dose of calomel and colocynth, or a saline laxative, will be of use as a preparation for food and for the opiate, which may best be given at bedtime. You may then give from a half to one drachm of tincture of opium, which I believe to be a better soporific in these cases than

the salts of morphia; and a smaller dose may be given in three or four hours if necessary. The first object is to procure sleep. But here I wish to impress upon you the necessity of great care and watchfulness. Do not make rash attempts to force on sleep by repeated large doses of opium. These attempts will often fail to procure sleep, and they may kill the patient. It is an undoubted fact, that opium in many of these cases has no soporific effect whatsoever. And not only in cases of delirium tremens is opium uncertain in its operation. When we give opium in ordinary cases of disease as an anodyne or a soporific, we can never be sure that it will cause sleep. In a considerable proportion of cases opium *prevents* sleep, and makes the patient more wakeful than he would have been without it. Another not uncommon effect of an opiate is to cause nausea and faintness. These two effects of opium should always be borne in mind in the treatment of delirium tremens. Remember that when opium fails to act as soporific in delirium tremens it is not inert, and must not be given in repeated large doses as if it were; while it fails to procure sleep, it may be exerting a powerful depressing and paralyzing influence upon the heart. The symptoms of opium thus acting on the heart are these: The patient continues wakeful, excited, and delirious, but grows rapidly weaker; the pulse becomes quick, small, and feeble; the pupils are contracted; the skin is bathed in a profuse sweat; and, if the opium be continued in large and frequent doses, the patient rapidly sinks, but remains wakeful and conscious until perhaps within a few minutes of the end. The opium in these cases acts as a powerful sedative on the heart, and in proportion as it does this it fails to exercise any soporific influence. If you find that opium is acting thus injuriously, you must immediately discontinue it, and give liberal doses of brandy, or the stimulant to which the patient has been accustomed. Full doses of quinia, too, will be of use as a tonic; and nutriment, either in the liquid or solid form, should be freely given.

"It is an undoubted fact that the soporific effect of opium is often much more certain and decided when the medicine is given with some alcoholic stimulant than when it is given alone; and I have seen not a few cases of delirium tremens in which, after repeated large doses of opium have failed to procure sleep, a liberal allowance of the patient's accustomed stimulant, more especially when combined with food, has been followed by a long sleep, and this by an entire freedom from delusions and delirium. I scarcely need impress upon you that these unquestionable facts are quite irreconcilable with the hypothesis that the proximate and essential cause of delirium tremens is the presence of alcohol in the blood. If the patient refuse to take the opiate or other medicine which you are anxious to give, he may sometimes be induced to take it mixed with his beer or other beverage. Both food and stimulants may be given by the rectum in case of need; and morphia may be introduced subdermically; but this mode of giving morphia requires at least as much caution as the administration of opiates by the mouth.

"Chloroform vapour has the immediate effect of quieting the delirium and excitement; but the quiescence is only temporary, and I have seen no permanent good result from it. The fat and flabby state of the heart in these cases is a bar to the incautious administration of chloroform.

"When there is much flushing of the face and heat of the scalp, cold lotions or iced water in a bladder may be applied to the head with advantage.

"You may have heard or read of large doses of tincture of digitalis having been given for the cure of delirium tremens. I consider this a very dangerous remedy. I have no doubt that some patients have recovered in spite of the treatment. When half-ounce doses of the tincture have been given, it is to be hoped that the digitalis was of bad quality; the patient would then, at any rate, have the benefit to be derived from the stimulant action of the rectified spirit. I have heard of several instances of sudden death after the administration of large doses of digitalis, and it is only natural that these calamitous results should not, as a rule, obtain equal publicity with the cases of apparently successful treatment. A consideration of the natural history of delirium tremens suffices, I think, to show that the treatment by large doses of digitalis is irrational and dangerous.

"To sum up, then, the main practical points which I have endeavoured to impress upon you. Bear in mind that an attack of delirium tremens, as a rule, subsides in a few days without help from medicines of any kind. Let the patient be carefully watched and guarded and fed, and the excitement and delirium will gradually subside. In many instances opium is a valuable aid in the treatment, and it will often cut short the disease; but remember that it is powerful for evil as well as for good. Its use, therefore, requires much care and discrimination. Some form of alcoholic stimulant will often be of great use in calming the nervous excitement and procuring sleep."

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24. *Treatment of Pneumonia.*—Dr. ALEX. SMITH has published (*Edinburgh Medical Journal*, July, 1866) some interesting facts in regard to the treatment of pneumonia, deduced from his experience in 108 cases in soldiers, treated at various stations in Canada. There were 3 deaths, giving a mortality of 1 in 36.

In regard to bloodletting, he says: "My experience of the effects of bloodletting convinced me that its employment at the outset of pneumonia in its sthenic form was attended with most beneficial results, not only in shortening the duration of the disease, and rendering convalescence satisfactory, but also in giving an amount of certainty and uniformity to the results of treatment which could not be attained by the employment of any other combination of remedies. As to its power in "cutting short" the disease—if by this term is meant to be expressed the probability of its at once arresting, and as it were stamping it out—my own experience would go to show that its employment is not attended with any such result. In proof of this I may mention that so soon as I became aware of the import of the condition of the respiration, which is first observed at the outset of pneumonia, I attempted, by early bleeding before the disease had advanced beyond the stage indicated by obscurity of the respiratory sounds, to arrest it in that of engorgement. In no case, however, was this practice attended with the result desired; but, on the contrary, in every attack so treated, instead of being altogether prevented, small crepitation seemed to undergo an earlier development—an occurrence which may perhaps be held as in some measure bearing out the accuracy of the views I have expressed as to the nature of the early stage of the disease in sthenic attacks. The subsequent progress of all such cases bled was otherwise invariably satisfactory.

"I would still, however, feel inclined to consider this question in the light of an open one, and to believe, until distinct proof to the contrary shall have been produced, that bloodletting practised soon after the occurrence of the rigor may possibly at once arrest the disease. I am the more inclined to this view of the matter, because Dr. Jameson, my colleague in the 47th Regiment, informs me, that in one case which he bled freely immediately on the man's admission into hospital, and within a very short time of the occurrence of an attack of rigor which, from all the attending circumstances, and happening as it did at a time when pneumonia was prevalent, among the men of the corps, appeared to be the initial symptom of an attack of that disease, no further indisposition followed. This may or may not have been a case which, if it had not been so treated, would have proved one of pneumonia; but still I believe the fact is worth recording.

"A perusal of the records of cases which I have given above will show I think, upon the whole, with considerable clearness, that it was by limiting the stage to which the diseased action advanced, rather than by affecting the extent of lung to be attacked, that bloodletting manifested its power to shorten the duration of the disease. That it also influenced the amount of lung attacked, however, appears evident, from what was found to have happened in some of the fatal cases, neither of which were bled at the outset of the disease. It may be here stated, with regard to the extent of lung affected in cases early bled, that it amounted, as a general rule, to from one-half to three-fourths; and that in respect of the part first attacked, in no instance did the disease begin at the apex.

"After having most carefully watched the whole course of the disease in attacks where bloodletting was employed at the outset, I feel satisfied that in no case so treated did red hepatization take place; both the exaggerated respiratory sound

heard near the acme of engorgement, as well as the absence of evidence of the entrance of air, except during forced respiration, which frequently for a few hours preceded the setting in of small crepitation, having been, as already so often stated, unconnected with any degree of actual consolidation. Neither were the bronchitic sonorous râles occasionally audible along with large and small crepitation near the middle of the lung, in the course of some of the cases, confounded with the blowing sound of bronchial respiration heard when true hepatization was present. The facts of greatest importance, however, noticed with reference to the employment of bloodletting, were the rapidity with which such cases recovered in proportion to the severity of the attacks, and the uniformity of the results observed on a review of the whole cases so treated, as compared with that obtained in the milder and more asthenic attacks in which bloodletting was not made use of. This has been shown by the tabular statements given at an earlier part of the paper.

"A further consideration, possessing also considerable practical importance, is the fact, that in cases not bled it was found that there existed, throughout the greater part of the attack, a danger that a fresh accession of fever, and a rapid advance to hepatization, might not only suddenly occur, but do so at a period of the disease when good results from bloodletting, if it should then be employed, were but little likely to be obtained. In conclusion, I would, however, beg that 'it may be distinctly understood, that whilst advocating the employment of bloodletting at the outset of sthenic cases of pneumonia, such as are seen in young and previously healthy soldiers, and whilst maintaining also from actual observation that the good results which follow such a mode of treatment surpass in a marked degree those obtained from any other combination of remedies, I do not in any way call in question the value of that mode of treatment termed 'restorative,' as applied to a particular class of cases, and which has been employed with so much success in the management of the pneumonia as seen in civil hospitals in Britain.

"It would appear, however, from such limited details as have been given of the cases, on the results obtained, in which this plan of treatment has been based, not only that the attacks were of an asthenic character, but it may also be inferred that, in a large proportion of instances, the disease had advanced to the stage of actual consolidation before it was brought under medical treatment at all. On this supposition, therefore, these were cases in which bloodletting would in all probability have been inadmissible, but they were exactly such as would derive benefit from the description of treatment in question. My own experience of pneumonia would, accordingly, lead me to conclude that it was only in such asthenic cases as those above referred to, modified as they must be by the minor degree of intensity of their exciting cause, as it prevails in a climate equable on the whole as that of Britain is, and influenced also as they cannot fail to be by conditions of food, clothing, locality, and occupation, that this plan of treatment can be advantageously employed.

"In sthenic cases, such as came under my own observation in Canada, and of which it is possible that examples may occasionally be met with at home, facts have convinced me that a restorative plan of treatment could not be exclusively employed without the risk of at least a considerable mortality, or at all events the almost certainty of a recovery protracted beyond what it would have been had bloodletting been made use of. I would further add, that what I have learned in the course of this inquiry induces me to believe that much of the confusion and diversity of opinion which have of late years arisen on the subject of the pathology and treatment of pneumonia has been the result of a somewhat restricted view of the extent of the field of inquiry embraced by the subject under investigation, and the too resolute belief, not only that the asthenic pneumonia, which has of late years supplied the large proportion of the cases met with in this country, is the sole form in which inflammation of the lungs prevails now, but is even the only type in which that disease has existed at any previous period. I must at the same time beg leave to be pardoned if I venture also to hint my suspicion that some portion of this state of opinion may likewise be due to the condition of the lungs which exists during the highest state of engorgement having been confounded with that state of actual hepatization the

occurrence of which renders it absolutely essential for the cure of the disease that the next highest stage—that of suppuration or gray hepatization—should also follow."

25. *Treatment of Diphtheria.*—Dr. W. LINDESAY RICHARDSON, of the Ballarat Hospital, Melbourne, has in the course of seven years had under his care two hundred and twenty cases of diphtheria. Of these, one hundred and seven occurred in children under ten years of age. The number of deaths was eighteen; two only of which were in-patients about five years old. This mortality (8.2 per cent.) is, Dr. Richardson observes, very little in excess of that of measles (7 per cent.). As to the treatment, he observes that there is no disease more amenable to treatment in patients over five years of age, nor any in which a favourable termination may more speedily be predicted. The treatment consisted in 1859 of the free use of caustics from the first, chlorine gargles and iodide of potassium. This was not successful. In 1860 and 1861, the chlorate of potash and hydrochloric acid mixture was used, still occasionally applying caustic. Since then, local applications have been completely disused, and the muriated tincture of iron has been given in full doses, and latterly the chlorate of potash in powder with sugar dry on the tongue. Dr. Richardson used the nitrate of silver, in the first years of the appearance of the disease; then hydrochloric acid and honey; but his experience is that all applications to the throat are useless, and even hurtful. The mixture containing free chlorine he considers certainly of great value, but its strength appears to vary and its action is not certain. The muriated tincture of iron was first brought into notice, as a remedy in this disease, by the author's friend, Mr. T. H. Smith, of St. Mary's Cray, in a paper that appeared in the *British Medical Journal* some years ago. Dr. Richardson has found it most reliable in all cases of membranous diphtheria. The fever symptoms are no indications against its use, as under it the pulse falls. In a case under treatment, one day the pulse was 146; the patient was put on twenty minims every two hours, and next day it was 96, with an improving throat. It did not, however, appear to exert any speedy influence over the disease when it had extended into the trachea. It was necessary then to resort to emetics, to expel the false membrane as it forms. Dr. Richardson prefers common salt and sulphate of copper; succeeding these, the inhalation of turpentine on hot flannels, with the constant application of compresses around the throat, are most beneficial. Dr. Richardson performed tracheotomy in one case, and assisted at it in several, but always without success. In putrid sloughing throat, he finds that neither caustics, nor tincture of iron, nor solution of chlorine, nor quinia, exert any influence; and after trying various remedies he at last hit upon what he believed a most valuable remedy, chlorate of potash in powder. It appears to be unactive, even in a saturated solution; but in large enough doses, mixed with sugar, dry on the tongue, it exerts an immediate influence. In mixed or relapsing cases, an alternation of the two meets the case. On the important question of support to the patient, there can be no difference of opinion. Dr. Richardson has not examined the urine in every case; in those in which he did, he did not find any trace of albumen, nor any deposit more abnormal than lithates and purpurates. Six persons suffered at different times from two distinct attacks. Recovery as a rule is rapid, and paralysis as a sequela has been rare; three cases only having occurred.—*Australian Med. Journ.*, July, 1865.

26. *The Milk Cure.*—The *Edinburgh Medical Journal* for August of the present year contains an article on this subject by Dr. PHILIP KARELL, Physician to the Emperor of Russia, translated by Dr. Carrick. After giving a brief historical sketch of the use of milk as a remedial measure, he says: "With regard to my own practice, I have, after fruitlessly trying all sorts of remedies in many chronic and obstinate diseases, at last succeeded in thoroughly bringing the alimentary canal, that seat of so many diseases, under my control. I did this by administering milk according to a new method. The results which I have thus obtained tempt me to publish my observations with reference to the efficiency of this mode of cure, provided, of course, that it be administered with

method, and by a person of experience. And in the first place, then, must we attribute the beneficial influence of milk in certain serious illnesses merely to its nutritive qualities, or to some occult medicinal virtue? I cannot pronounce in favour of the one or of the other hypothesis. It must be remembered, however, that milk and chyle resemble each other very closely. After a great deal of experience, I have arrived at the conclusion that in *all dropsies*, in *asthma*, when the result of emphysema and pulmonary catarrh; in obstinate *neuralgia*, when its cause lies in the intestinal canal; in diseases of *the liver* (simple hypertrophy and fatty degeneration), and generally in diseases where there is faulty nutrition, often a consequence of obscure subacute inflammation of the stomach or intestines, followed by affection of the nervous centres—in all these cases I consider milk as the best and surest of remedies. Even in those cases where the dropsy is the result of organic heart disease, or of old-standing liver complaint, or of far-advanced Bright's disease, I have seen very marked improvement take place, which also lasted a considerable time. But if, unfortunately, we are unable to cure organic disease, shall we not have conferred a great benefit on poor anasarcous patients if we reduce, with a promptitude little hoped for from other remedies, the distressing symptoms of œdema?

"If, in giving a general definition of the milk cure, we call it a *nutritive cure*, it by no means follows that it should only be administered in diseases dependent upon a perverse nutrition. It might as well be defined as a *sedative* cure, for it is very often useful in those cases where Valsalva would in all probability have employed fasting and phlebotomy. A more exact definition, perhaps, would be, that milk, when methodically administered, is a *regulator of nutrition*. It might perhaps be urged that milk is a well-known remedy, and that every physician uses it in appropriate cases. I admit that all medical men are sufficiently well acquainted with milk as a nutritive agent, and as an antidote, but I speak from experience when I assert that in general the cure by milk, *scrupulously administered, and in strictly measured doses*, is not sufficiently, and only very rarely, recognized as a sovereign and useful remedy.

"I have frequently, during the last fifteen years, been called into consultation in cases which were thought hopeless, and in many of which I recommended the milk cure, which had never been resorted to during the whole course of the malady. I had prescribed, even before that time, the employment of milk, but without regulating its administration. It was only by degrees that I arrived at a methodical system of treatment."

The following is Dr. K.'s mode of treatment:—

"I generally commence the cure by employing milk *alone* and forbidding all *other kind of nourishment*. I proceed with great caution in prescribing for the patient, three or four times daily, and at *regularly observed intervals*, half a tumbler or a tumbler, *i. e.*, from two to six ounces of skimmed milk. Its temperature must be made to suit the patient's taste. In winter they generally like tepid milk, heated by placing the tumbler or cup in a vessel filled with hot water. In summer they generally prefer it of the same temperature as the surrounding atmosphere. They should not gulp it all at once, but take it slowly and in small quantities, so that the saliva may get well mixed with it. Of course, the milk must be of good quality. That of town-fed cows has an acid reaction; that of country-fed cows is better, because its reaction is generally neutral. If the patient digest the milk well, which is proved by the feces becoming solid, I gradually increase the dose. The first week is the most difficult to get over, unless the patient has a strong will and firm faith in the cure. During the second week, two ordinary quarts are generally administered each day. If the cure take its regular course, then the milk must be drunk four times daily—at eight in the morning, at noon, at four P. M., and at eight P. M. If the patient desire it, I change the hours, but I always insist on regular intervals being observed, for the patient will think lightly of the cure if he be not ordered to observe some regularity while subjected to it. No confidence can be inspired, and no cure expected, if the physician says to his patient, 'Drink milk in whatever quantities and whenever you wish.'

"When obedient to the physician's orders, the patients complain neither of hunger nor thirst, although the first doses appear very small to them. If,

instead of four cups of skimmed milk, a person afflicted with a severe illness takes four large tumblerfuls of unskimmed milk, you may be sure he will not digest it, and his confidence in the remedy will be shaken at the very commencement. * * *

"But it must not be supposed that such an effect can generally be produced when nothing is administered except small doses of milk. I have placed patients who were taking milk in minute quantities also on beef-tea, white bread, and water; but I never observed the same satisfactory results after this mode of treatment. The cure never was complete when allowed anything except milk to be taken for dinner. Sometimes, when the invalid had arrived at taking from ten to twelve glasses per day, I observed a return of his illness. I had then to commence the cure anew, by prescribing milk in small doses. At the beginning of the treatment, the patient's bowels are frequently constipated, which I consider of good augury. The feces become very hard, in consequence of the absorption of the fluid particles of the milk. This may be remedied by warm water injections, or by the use of castor oil or rhubarb. Persons suffering from flatulence are soon relieved of it by the milk cure. If the constipation be obstinate, I order the addition every morning of a little coffee to the dose of milk, or, towards four o'clock P. M., stewed prunes or a roasted apple. If, on the other hand, diarrhœa and borborygmi be the result of this mode of cure, it proves either that the milk was too rich, or that it has been administered in too large doses. If the diarrhœa does not arise from ulceration of the intestines, it is sure to be cured by strict observance of method in this treatment.

"Feverishness is no contra-indication to its use. If the patient feel very thirsty, I allow him to drink water or Seltzer-water. If he have a strong desire for solid food, I allow him, at the end of the second or third week, a little stale white bread with salt, or a small piece of salt herring. At four o'clock, *i. e.*, his dinner hour, the patient may, as in the morning, take a small quantity of stale bread. Once a day, instead of pure milk, I give him some soup made of milk and oatmeal. After continuing this treatment for five or six weeks, it may be modified (according to circumstances) by our allowing only milk thrice daily, and once a week a steak or chop. I have found that raw meat is easiest to digest.

"The strongest opposition to treatment I have generally experienced from the patients themselves, and the cause is easily explained. If a person, suffering from some chronic ailment, has already been subjected to various modes of treatment, without having been cured by any one of them, and if the milk cure be suggested to him, which, in his opinion, can lead to no improvement, he thinks it is the same as a verdict which declares: 'You are lost, and medicine cannot save you!' I have sometimes seen nervous patients grow seriously alarmed, and request time to reflect whether they should subject themselves to the treatment or not. Thus the patients either assert that milk is repulsive to them, or that they are unable to digest it; this one because he has always been troubled with his liver; another because he smokes; while a third is afraid he will die of hunger, or pretends that he has already tried the milk cure, but was unable to continue with it because of the disagreeable effects it produced. Others ask what purpose the milk cure can serve, when other medicines have done little, if any good. My answer then is that milk is a food easy of digestion with every person, provided it be given with precaution, that it be of good quality, and administered in definite doses; that it is the first food of man, and that a new-born infant shows no dislike to new milk. To die of hunger, even when taking nothing but milk, is impossible, since there are people who take no other nourishment. In milk are united all the elements necessary for the nutrition of our body, and besides this substance is easily assimilated. Lastly, I add that long experience has convinced me that milk is an energetic remedy in many diseases, and that in some cases I prefer it to any other remedy. Thus I am rarely unable to persuade the patient to follow out my advice; and in the majority of cases, notably those of dropsy, I have generally had the satisfaction of receiving, in a very short while, the sincere thanks of the patient for the speedy relief he felt. * * *

"In summing up the phenomena always observed among the patients cured

or treated by other physicians and myself, I must enumerate: An intractable state of the blood, impoverished to the utmost extent, and general dropsy; disordered innervation, assuming the forms of hysteria, or hypochondriasis; obstinate dyspepsia, neither the result of congestion of the stomach nor of cancer of that organ; in fact, catarrhal, rheumatic, and gouty affections, as also nervous maladies not the result of a *local disease*, but of quantitative and qualitative defects in the fluids; or, to speak, more clearly, a constitutional disease. If the cause of the disease was apparently situated in the organs of digestion, the more strongly was I tempted to try this cure. I have thus cured, or very much relieved, chronic irritations of the pharynx and of the œsophagus, ulcers of the stomach, and similar diseases of the digestive tract. These *gastric cases* formed the greater portion of the 200. Among these, satisfactory results were obtained in a very short time. The desponding patient became lively, the gloomy countenance brightened up, the big belly decreased in size, and, as a consequence, many other unpleasant symptoms disappeared; in a word, the patient felt quite a new man.

"And even where the seat of the malady was not always as clear as in the cases above cited; but where the disease of any organ seemed to be connected with some derangement of the digestive tract, I have invariably tried the milk cure. For I thus produce a good result simply by regulating the diet, and by excluding indigestible articles of food. And I have thus frequently had the satisfaction to see a complete cure effected by such simple means in cases where deep-seated organic disease was suspected. My own experience, and that of other physicians, has shown that great improvements, and even almost a complete feeling of health, have attended this treatment, when employed in cases of organic disease of the heart, of advanced degeneration of the kidneys, etc. Taking into consideration the fact that hypertrophy of the heart and the central congestion, as well as increased bronchial secretion which result therefrom, are frequently caused by disorder of the abdominal circulation, I think I have found an exact indication for the milk. I have modified the milk cure according to circumstances in treating plethoric persons.

"The fatty degeneration of the arteries, and the consequent friability being so frequently one of the determining causes of apoplexy, I think we shall find an exact indication in that disease for the use of milk. Neither can I say that constitutional debility was common to all patients whom I placed under the milk cure. On the contrary, I have made persons of a florid complexion undergo the treatment—persons of muscular build and a full pulse, who are generally ordered a temperate regimen, and who, to prevent congestion and apoplexy, take bitter and saline solutions with benefit. For advanced tuberculosis we have no remedy. In cases where this disease is complicated with tubercular ulceration of the intestines, I cannot foretell very good results from the use of milk.

"Fever is no contra-indication to its use. The utmost caution, however, should be used when milk is administered in such cases. At the commencement the doses should not be increased too speedily, for the patient's stomach will not absorb more milk than it can digest.

"To sum up, I have already strongly expressed myself against the practice of extolling the milk cure as a panacea; nevertheless, I feel no hesitation in declaring that the number of cases for which I prescribed the milk cure with a great degree of confidence is very considerable, and that in these cases I could have expected no good results had I resorted to any other mode of cure."

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27. *Citrate of Soda in Diabetes.*—M. Guyot-Dannecy recommends citrate of soda, in daily doses of half a drachm to a drachm, as a remedy in diabetes. It has been shown by analysis that sugar disappears from the urine when this salt is used with the food instead of common salt. It is also known, since the researches of Wœhler, that the alkaline salts of organic acids, when given in doses too small to produce purgative effects, are absorbed, and, their acid being burned up in the respiratory process, are eliminated by the urine as carbonates. Hence citrate of soda may, without interfering with the gastric acid in the same way as alkaline carbonates, place the system under the influence of an alkaline carbonate, which is indispensable to the interstitial combustion of the glucose of the food.

The efficacy of this remedy, and its superiority to the prolonged administration of bicarbonate of soda, have to be proved by clinical experience.—*Brit. Med. Journ.*, May 19, 1866, from *Bull-Gén. de Thérap.*, April 15, 1866.

SURGICAL PATHOLOGY AND THERAPEUTICS, AND OPERATIVE SURGERY.

28. *Osteo-Myelitis.*—This affection, which is one of the frequent causes of death after amputation or other injuries or surgical operations involving section of bone, attracted the attention of a number of our surgeons during our late war, and was made the subject of a highly interesting paper by Dr. H. Allen, published in the No. of this Journal for January, 1865.

Dr. J. FAYRER, in his address before the Bengal Branch of the British Medical Association, published in the *Indian Annals of Medical Science*, October, 1865, states that with the view of illustrating this affection, he has noted 32 amputations performed within a period of two years in his practice in the wards of the Medical College Hospital. These amputations "were all capital operations, *i. e.*, of the upper and lower extremities, either at the joints, or through the continuity of the long bones. They were—*one of the hip, three of the thigh, ten of the leg, four of the ankle (Syme's), five at the shoulder-joint, five of the arm, four of the forearm. Of these, thirty-two in all, three* were secondary amputations, and of the *number, fourteen lived, fifteen died. Of the deaths, nine resulted* from pyæmia, the consequence of osteo myelitis, *three from pyœmia* not depending on bone disease. There were *six deaths* from other causes, such as tetanus, gangrene, exhaustion. Now it will be at once recognized that this proportion of deaths from pyæmia, depending on bone disease, is something unusual—something very different to the ordinary death returns of other hospitals. It is this, therefore, that I wish specially to call your attention to, not only in regard to its pathology, but with respect to the treatment, which involves a question of amputation of much importance.

"The subject of acute suppuration in bone is one which has, apparently, not attracted much attention hitherto in this country, nor, indeed, has it been, so far as I am aware, so much studied anywhere as by the French surgeons, who have given it the name of *osteo-myelite*, by which we also now distinguish it. M. Jules Roux, Surgeon in Chief of the Great Naval Hospital of St. Maundrièr, in Toulon, is the authority to whom we are indebted for the most elaborate account of this important subject in both its pathological and surgical bearings. His experience was chiefly gained in the treatment of the wounded of the French-Italian war, who were sent to Toulon for treatment—all, consequently, cases of disease or injury of some standing; and the results of his observation and treatment are interesting in the highest degree: for they not only establish the recognition of the disease as a formidable result of operations on bone and of injuries, such as those inflicted by gunshot wounds in bone, but they point to the necessity of thoroughly re-considering the question of amputation, and fully, in my opinion, tend to confirm the view that the site of the amputation has, not less than the time at which it is performed, much to say to the mortality.

"M. Legouest tells us that at the Hospital of Dolma Bachè in Constantinople, out of 639 cases of amputation, M. Salleron lost 224, or little less than one-fourth. The amputations in the continuity of the bone were 490, resulting in 192 deaths from purulent infection of 1 in 21.2. The disarticulations, in number 149, resulted in 32 deaths, or 1 in 42.3.

"M. J. Roux records, in his practice in St. Maundrièr, the following remarkable success in the treatment of serious cases of gunshot injuries requiring amputation, all being secondary amputations.

4	Hip-joint	Successful.
13	Shoulder-joint	"
1	Knee "	"
3	Ankle "	"
1	Metacarpo-phalangeal	"

"A series of 22 successful disarticulations, 20 of which followed gunshot injuries of bones.

"Now it is perfectly clear that this extraordinary success is due to something more than the skill of the surgeon, the advantages of the hospital, or other local conditions in which the patients were placed; and I think the evidence is strongly in favour of the fact that disarticulation is frequently a safer method of amputation than section of the injured bone, and also, that in cases where the bone is affected from local endemic causes, it is a clear indication that removal of the bone so diseased is desirable—That, after amputation, they have this tendency, in certain cases, to become diseased, there can be no doubt, and, in certain places, and under certain conditions, this tendency is more strongly marked than in others. It has long forced itself upon my attention in this hospital as one of the most frequent sources of purulent infection and consequent mortality from which we suffer.

"I would be understood that it is not to the *disarticulation*, as such, that I attribute the success in all cases, nor do I urge the operation always in preference to section of the bone of the next segment of the limb. In the cases of the hip and shoulder, disarticulation, of course, alone is practicable; whereas in the leg and forearm, the respective advantages of disarticulation at the elbow or knee may fairly be questioned; and I have no hesitation in saying it is my opinion that, except in cases of endemic tendency to osteo-myelitis, section of the humerus or femur, in their lower third, is as good, if not a better operation than disarticulation. The great point to be attained is removal of the whole of the suppurating bone; of course, whenever the endemic tendency to osteo-myelitis prevails in a hospital, this disarticulation, though, in itself, inferior as an operation to section of the bone (according to my view in the case of the elbow and knee), would be preferred to amputation through the bone, as the fresh bone-wound might, under the endemic influence, give rise to an attack of osteo-myelitis.

"The points of interest in M. Roux's treatment are, that by disarticulating, he anticipates the chance of osteo-myelitis, by not opening the cancellated tissue of the bone (in ordinary wounds); and that in cases where it has set in, he removes the source of blood contamination by the ablation of the affected bone.

"I have no intention of discussing the question of the general application of the term osteo-myelitis in the wide sense in which it is given to the chronic form of disease by the French surgeons, and which involve a whole series of pathological changes in bone, in which the necessity of immediate amputation, is, at all events, not concerned. But it is to the acute and diffusive, a sort of erysipelatous form, an analogue of diffuse suppuration in the areolar tissue, that I refer—a disease, so far as I have seen it, so extensive, as regards the bone it affects, that it causes its entire destruction, and speedily, if not removed, gives rise to that septic condition of the blood which results fatally in a large number of cases, and where, after death, the evidences of the blood-poison are seen in structural changes in the viscera of the most interesting nature. These I will presently describe. It is to this point in the pathology of the disease that I would especially call attention, for, grievous as the injury of the bone is when it becomes the seat of this acute suppuration, it is not *the mere local mischief* that one dreads, although one may cause the loss of the limb. It is the *constitutional disease* to which it gives rise, and the consequent morbid condition of the blood, which is, I believe, if once thoroughly established, and not promptly dealt with, certain to entail fatal results, that we must consider *the great source of danger*. It is, then, not only to the disease, acute suppuration in the cancellated tissue, involving the whole bone and causing its rapid disorganization, but it is also to the treatment by which I believe, if the disease be early recognized, life may be preserved, that I would call attention, and it involves a ques-

tion of amputation of the greatest importance, which I think I have satisfied myself in my own experience, as well as by the results of M. Jules Roux's practice, is deserving of the consideration of every surgeon. It is, indeed, not less than it was pronounced to be by the Baron Larrey—'a system which, if it could be adopted without control, would be, so to speak, to revolutionize the surgery of amputations.' It is not, I need hardly say, to be adopted without control, but to be carefully considered and applied in fitting cases. It is a doctrine that will thus be the salvation of many lives which otherwise would be lost."

With regard to treatment, Dr. F. says: "Prevention here is indeed better than cure. The former *may* be accomplished; the latter, when the disease has thoroughly established itself, is, to say the least, very rare.

"The preventive measures are all such as are included in the great questions of hospital hygiene—free ventilation, good food, and segregation of patients. osteo-myelitis occurs no doubt, like other diseases of the same genus, more readily where numbers are crowded together, and where the ventilation and other sanitary arrangements are also defective. The disease is also at times epidemic. It has visited hospitals for a time and passed away, like erysipelas or gangrene, as was the case in the Hôtel Dieu in 1814, where it caused great mortality after amputations. It is more or less endemic, as in our own hospital, and how far it is due here to insanitation I am not prepared to offer an opinion, but I have already said that I think it is at least as much due to the people as to the Hospital, and I can say that no efforts have been spared to remove all local causes of disease.

"Wherever sanitary arrangements are good, with pure air, good food, space large, and, above all, where the patients are not overcrowded, the conditions exist which are unfavourable to the occurrence of the disease.

"As to treatment, the earlier the disease is recognized, the more likely is any treatment to be successful.

"When the pulse quickens, and rigors occur, when the discharge begins to assume an ichorous and unhealthy character; when, on examination, the bone proves to be denuded of periosteum and the medullary cavity filled with dead bone and pus, I am satisfied that the sooner amputation at, or above, the next joint is had recourse to, the better is the chance of saving the patient's life. The danger is of waiting too long, long enough for the blood poison, or the capillary embolism, to have brought about changes in the viscera, which are the precursors, if not the cause, of death.

"On the earliest appearance of these symptoms after an amputation or injury of bone, the sooner the bone is thoroughly examined the better, and the conditions I have described being detected, the sooner amputation at or above the next joint follows, the better also.

"As to the use of internal remedies I have little to say, none, so far as my experience goes, have any effect. The tinct. ferri sesquichloridi, port wine, quinine, and, according to Polli, the sulphites, have been freely used; but to none of them have I been able to ascribe any curative effect. Beyond supporting the strength, removing the source of the toxæmia by amputation or excision of the bone, and the administration of preparations of iron with stimulants, I know of no hope or chance of saving life; and when the lungs or liver have become affected, it is indeed small.

"I cannot say recovery is impossible, for, indeed, if the symptoms be early observed, and prompt measures had recourse to, before the blood-poisoning have advanced too far, I believe it may and does occur; and the case I shall relate to you, in which recovery followed secondary amputation, is one in point. Youth and vigorous constitution, aided by early removal of the diseased bone, no doubt, were the chief causes of recovery.

"In those cases where collections of pus form external to the cavities, as in the joints, or under the superficial muscles, early evacuation of the pus and careful support by nutrients and stimulants, with change of air and other improvements in the hygienic state of the patient, may bring about recovery, but in cases of oxæmia from osteo-myelitis, the tendency appears to be to cause the visceral changes I have alluded to, and not the more superficial deposits of pus.

"Early amputation, or re-amputation, therefore, is the remedy which offers the best chance of success, and it should be, *not* in the continuity of the affected bone, but either at the next joint, or through the next segment of the limb.

"In M. Roux's hands disarticulation has had the most marked success. It has been with him not only curative, but prophylactic. *Prophylactic*, because knowing the tendency of bone to take on this disease when its cancellated tissue is opened or injured, he avoided this by amputating at the joint.

"The proper time for amputation (or removal of the affected bone) in osteomyelitis is not difficult to determine, for it should be as soon as possible after having ascertained that the bone is so affected, and, as I have said, the diagnosis is made by the constitutional and local symptoms, and by passing a probe into the medulla of the bone. Should it impinge on healthy *bleeding* medulla near the surface you may, if the constitutional symptoms are not urgent, wait and see if nature will limit the suppuration and throw off a ring of diseased bone; such expectations are, in my experience, rarely realized, and the doubt is generally resolved, not in favour of the bone. However, this is one of the nice points of discrimination in the treatment, and for which no absolute rules can be laid down. The constitutional signs, the state of the pulse, respiration, and temperature, would be important indications of the patient's condition, and they cannot be too carefully studied. A pulse exceeding 120, persistent temperature above 104, bronchial rales, hurried respiration, tenderness over the hypochondria, are symptoms that should cause the greatest anxiety on their first appearance, and very speedily decide the fate of the patient or of his limb."

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29. *Cancer: a new Method of Treatment, by which Malignant Tumours may be removed with Little Pain or Constitutional Disturbance.*—This is the title of a paper read before the British Medical Association at its late meeting at Chester, by W. H. Broadbent, M. D. London.

The attention of the author was directed to the treatment of cancer under the following circumstances: In 1864 he was consulted by a lady suffering from cancer of the breast. By his advice, the breast was removed by Mr. Walter Coulson. The disease returned, and was again removed in August, 1865. In May of the present year, a tumour was growing more rapidly than ever near the cicatrices of the former operations. It was decided that no further removal was advisable; and, unless something could be done, a miserable fate was before the patient. The hypodermic syringe is now in the hands of every physician; and it seemed to the author that by it some fluid might be injected into the tumour which might so far alter its structure and modify its nutrition that its growth might be retarded or arrested. After considering the various substances which presented themselves to his notice, he selected acetic acid, for the following reasons: 1. This acid does not coagulate albumen, and might, therefore, be expected to diffuse itself through the tumour; and the effects would not be localized at the point injected. 2. If it entered the circulation, it could do no harm in any way. 3. Acetic acid rapidly dissolves the walls and modifies the nuclei of cells on the microscopic slide, and might be expected to do this when the cells were *in situ*. 4. It had been applied with advantage to common ulcerations. On May 18 the first injection was practised. The tumour was of about the size of a small egg, and a patch of skin of about the size of a shilling had become adherent to it. The needle was introduced through sound skin an inch or more from the part involved in the disease, and passed to the centre of the mass. About thirty minims of dilute acid (one part of acid to one and a-half or two of water) were injected. It gave little or no pain. Next morning a bulla containing dark bloody fluid was found to occupy the patch of adherent skin. May 23: This portion of skin dry, hard, and horny; the adjacent part of the tumour not so hard. Again injected. The patient, residing in the country, was not again seen till June 7, when the piece of skin mentioned was found detached from the surrounding sound skin; and a probe could be passed in all directions to a distance of three-quarters of an inch or more between the tumour and the healthy structures. A little discharge issued from the fissure mentioned. Injected on this date, and again on the 9th, the acid used being rather stronger. It gave a little pain, and swelling and tension of the parts around

followed. On June 13, and a few days afterwards, there was a free discharge of fluid and solid portions, with relief of the swelling, etc. No fetor whatever attended this discharge, which afterwards diminished greatly. Seen again on June 26, when, on external examination, the tumour was found to be much smaller; and, on passing a probe into the opening, it entered a large cavity extending on all sides. Part of the walls seemed free from malignant structure, but at several points a crust of cancerous deposit remained. On attempting to inject, it was found too thin to retain the fluid, which either entered the tissues and gave great pain, or made its way into the cavity. The cavity was stuffed with lint saturated with dilute acid, and the case left in the care of the family medical attendant, who was to inject as he saw opportunity. July 13: No impression made on the remaining disease, which had, in the opinion of the medical man, extended somewhat. Carbolic acid was tried for a few days as an application, but discontinued, and the cavity dressed daily with strong acetic acid by the medical attendant, and injections practised daily. This energetic treatment gave much pain, and excited inflammation all round. When again seen by the author on August 4, there had been considerable hemorrhage, which had been arrested by free application of tincture of sesquichloride of iron. The result, however, was apparently the entire removal of the remains of malignant disease; and, when last seen, a healthy granulating surface was left at every point. Three other cases were related by the author. The author further formulated certain conclusions from the experiments detailed, and stated the cases to which, in his opinion, the treatment was not applicable. Guided by his experience, he considered large quantities of dilute acid preferable to stronger acid; and he would not, without great hesitation, attempt the destruction of any tumour which had not involved the skin. His aim had originally been, as stated in the early part of the paper, not necrosis of malignant tumours, but a modification in their nutrition. The theoretical grounds for this hope were, that cancer owed its malignancy to its cellular (to use a nomenclature now almost antiquated) or fœtal structure; and that in acetic acid we had an agent which might be expected to diffuse itself through the tumour and reach the cells, and, having reached them, to effect changes in their structure, and affect them vitally, while it could scarcely do harm. The results he had brought before the profession at the earliest possible moment. The ultimate value of the treatment he left to be decided by a more extended experience. It was important to use large quantities of dilute acid, and not to have the acid too strong.—*Med. Times and Gazette*, Sept. 1, 1866.

30. *Umbilical Hernia.*—M. DEMARQUAY calls attention to the fact of how little attention has been paid to perfecting our procedures in respect to umbilical hernia as compared with the inguinal and femoral forms of the malady. The inefficient manner in which it is supported in children cannot have escaped the observation of every one, and, with few exceptions, matters are still worse with the adult, giving rise, not only to the danger which ensues on strangulation, but also to a variety of gastro-intestinal disturbances. These last at once disappear when a suitable apparatus is applied. By far the best form of this that M. Demarquay has employed consists in a little pyramidical pad formed of very supple vulcanized caoutchouc, and filled with air. The hernia in children can, by the aid of this, be easily retained. When it has to be applied it is affixed to a very supple strip of diachylon, as broad as itself and nearly long enough to surround the body. It should be renewed every day or two after placing the child in a bath, but it can be dried again for future use, and is very cheap. When at the end of some months the hernia has become very small, or has no longer a tendency to come out, the caoutchouc may be replaced by a little ball of wadding. These air caoutchouc pads may also, when properly adapted in size and form, be very advantageously employed in the adult, affording complete relief to the distressing symptoms induced when the hernia is ill-supported. The diachylon strip requires to be proportionally broader, and two smaller strips should lap over it above and below the pad, to keep it *in situ*.

When umbilical hernia becomes strangulated it is a very serious occurrence, most of the patients dying of peritonitis when an operation has been performed

for the relief of the strangulation. This has induced M. Demarquay to consider whether the operation without opening the sac, so often successfully performed for inguinal hernia, should not be preferred. It seems, indeed, pre-eminently suited for this form of hernia, for, first, the ordinary operation, leading to so large an exposure of the abdomial cavity, is usually fatal; and, next, the course of a strangulated umbilical hernia is much slower, with respect to the production of sphacelus, than is the case in inguinal and femoral hernia, there being, in fact, less danger of the intestine becoming divided or ulcerated by contact with the ring. For these reasons, M. Demarquay, quite recently performed the operation in this manner. An incision was carried upwards and outwards from the summit of the tumour, which equalled a large orange in size. Beyond the base of the tumour the incision only implicated the skin. At the base of the hernia, the external portion of the sac having been recognized, a very small puncture was practised in it, through which the end of the finger was passed and the intestine pushed back. This effected, a curved grooved canula was introduced between the intestine and the umbilical ring, the strangulation being relieved by means of an incision of about a centimètre in length made with a falciform bistoury, directed upwards and outwards. The intestines were left *in situ*, no attempt at their reduction being made. The wound in the skin was brought together by the interrupted suture, and opium was administered in divided doses. For the first twenty-four hours all went on well, when renewed symptoms of strangulation appeared and the patient died. "I found that the cause of death was due to a secondary strangulation, which had been produced by the swelling of all the parts, consequent upon the inflammatory process set up within the cavity of the sac; and I asked myself whether I had not been the involuntary cause of death by not dividing the stricture to a greater extent. I believe this to be the condition of success, and on the next occasion I shall resort to the same procedure, and relieve the strangulation with less timidity. It may not seem very logical that I should recommend an operation which has failed in my hands, but I may observe that, in presence of the inefficiency of our present means of treating strangulated umbilical hernia, it is very desirable that a more efficacious procedure should be sought for, and that in operative medicine we cannot judge of the utility of a procedure from a single case. An operation, however, badly conceived and executed, may sometimes succeed, while a rational one fails. Success is a great thing in surgery, but we must not disdain the investigation of new applications of rational measures when these have for their aim the treatment of an affection almost constantly fatal."—*Brit. and For. Med.-Chir. Rev.*, July, 1866, from *Union Médicale*, No. 33.

31. *Chronic Urethritis.*—M. Allaire terminates an essay upon this subject as follows: 1. It is almost always the result of one or more blennorrhagies. 2. In 90 times out of 100 (in 99 according to Delpech) one or more strictures exist in chronic urethritis. 3. There is a tendency to the formation of stricture after acute urethritis—60 times out of 69 cases, according to M. Marchal. 4. Changes in the surface of the canal are rare, those of the substance of its tissues being much more common. 5. The formation of the fibrous tissue being slow, treatment by dilatation has the better chance of success the sooner it is employed after such transformation and the atrophy of the normal tissues. 6. The seat of stricture is generally in front of the membranous portion. 7. In the great majority of cases cauterization, even when superficial, urethrotomy, permanent dilatation, and forced dilatation, should be rejected. 8. Rapidly repeated dilatation (*coup-sur-coup*) should only be employed where the strictures are easily dilated, and when the canal presents but little sensibility. 9. Gradual and temporary dilatation should be almost exclusively resorted to, and under its employment accidents either do not take place at all or are very rare and of short duration. 10. Strictures may be radically cured. 11. To compass this the normal calibre of the urethra must be exaggerated, and sometimes the meatus requires to be divided. 12. Bougies must be introduced from time to time during several weeks. 13. A bougie must be passed once a day, and immediately withdrawn, increasing the size progressively from one sixth to one half a millimètre. The bougie must be passed in gently, so as to give as little pain as possible; and when

there is strong contractility manifested by the stricture we should pause for a few seconds, and press with the end of the bougie, which will then pass much more easily. It is often of great importance to pass the instrument while the patient is in a bath. 15. The bladder should be penetrated into, or the stricture passed only to the extent of two centimètres. 16. When any accident arises—such as febrile paroxysms, cystitis, profuse discharge, articular pains, loss of semen, &c.—the dilatation should be suspended. The flow of blood at the commencement does not call for this precaution. 17. Baths or sitting baths should be employed after each *séance*, especially at first. 18. Copaiba, injections, &c., should be abstained from. 19. A metallic instrument should be introduced for several days at the end of the treatment. 20. The duration of the treatment varies greatly; but while a case may be sometimes cured in from eight to twenty days, as a general rule, a month or six weeks is required. 21. When No. 14 or 15 bougie (equivalent to eight and eight and a half millimètres) can be introduced, the discharge will ordinarily stop of itself in the course of a fortnight, without the use of injections.—*Brit. and For. Med.-Chir. Rev.*, July 1866, from *de Mémoires de Méd. et de Chirurg. Militaire*, Dec.

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32. *Treatment of Wounds by Ventilation.*—M. BÉRENGER-FÉRAUD draws attention to a mode of treating wounds and ulcers described by M. Bouisson of Montpellier in the second volume of his *Tribut à la Chirurgie*, under the name of ventilation. This consists in fact in leaving small wounds exposed to the air, and in acting upon larger ones by means of the domestic bellows for a period varying from five to twenty minutes every two, three, or four hours, according to the amount of discharge and moisture that may be present. The object is to secure the formation of a crust over the surface of the wound, under which cicatrization takes place far more rapidly than when the surface is not so protected; and the applications must be sufficiently frequent and prolonged to maintain this crust of a certain thickness. When the crust acquires a degree of rigidity, however, it must be displaced and another formed; and when the discharge is very abundant, the alcoholic dressings, now so much in vogue in the Paris hospitals, should for a while precede the ventilation. The influence of this last in improving the condition of the wounds is almost immediate, a disposition to cicatrize and a diminution of the discharge soon being apparent.

This mode of treatment, according to its originator, M. Bouisson, may determine sedative, astringent, siccative, antiseptic, and tonic action; but it is by no means indicated in all kinds of wounds, and especially in those whose depth is great in proportion to their superficial extent. Thus, it is not fitted for penetrating wounds, as those of a fistulous character, or characterized by anfractuosities. Abundant suppuration is a further contra-indication, except, indeed, when this is due to a mere hyper-secretion dependent upon local or general atony or perverted nutrition, and to the lessening of which alcoholic dressings supply a useful preliminary to the employment of ventilation. In slight burns other means may be preferable, as of more convenient application; but in those of the second and third degree, arrived at the stage of a simple denuded wound, ventilation may advantageously supersede cotton and other impermeable applications. In resorting to this means for ulcers, we have to attend to the constitutional cause of these, as well as to render them by various local applications apt for cicatrization before we resort to ventilation.

Among the secondary advantages of this mode of treatment may be mentioned its simplicity, its easy applicability by the patient or his friends, its economy and its cleanliness. It substitutes a dry for a moist surface, diminishes the chances of septic decomposition, and lessens the chances of infection of the surrounding atmosphere.—*Brit. and For. Med.-Chir. Rev.*, July, 1866, from *Bull. Gén. de Recueil Thérap.*, Jan. 31, 1866.

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33. *Successful Amputation at the Hip-joint on account of Malignant Tumour of the Femur.*—MR. JAMES SPENCE maintains that the true principle in regard to amputation for malignant tumours of bone is to ampute beyond the bone affected, and that this is true even where the disease is seated in the femur. He relates (*Edinburgh Medical Journal*, Nov. 1865) the following case in point,

the second in which he has amputated at the hip-joint for malignant growth of the femur, with success:—

"M. W., aged 5 years, was admitted on May 29, 1865, into the Royal Infirmary, suffering from a tumour of the right thigh.

"*History.*—Patient's mother states, that about six months previous to admission the child complained occasionally of wandering pains in the right thigh, for which fomentations were applied. About three months previous to admission, however, the mother observed the patient walking as if her right knee was stiff; she had a considerable amount of pain in the limb; was sometimes fretful and low-spirited, but her general health was good. On being asked where she had pain, the patient referred it to various parts of the thigh; and on examining locally, the mother observed an oval lump on the outside of the lower part of the thigh, about the size of a "blackbird's egg," and said to be deeply seated. No increase of growth was observed, however, till about ten weeks before admission, when the child is said to have received a blow on the lower part of the thigh (with a chair), and since that time the tumour has been increasing rapidly. Since then, the patient has also complained greatly of pains in the limb, on account of which the part has been fomented, poulticed, and leeched, without any relief. The parents then consulted Dr. Thomson, of Yetholm, who, recognizing the nature of the case, prevailed upon them to send her to the Infirmary. During the past few days, the patient has been losing her appetite, is low-spirited and complains more of pains.

"*On admission into hospital.*—Patient appears to be healthy, but is unusually quiet and reserved. Tongue slightly furred; lungs, heart, and other organs, normal. A tumour, of oval form, 5¼ inches in length, and about the same in breadth, was found occupying the anterior, outer, and posterior surfaces of the middle and lower part of the femur, just above the condyles. It is of firm consistence throughout, and movable along with the femur. The superficial veins are enlarged, but the skin is not adherent. Patient does not complain of pain on pressing the tumour. The inguinal glands on both sides, as also the right cervical glands, are hard, and somewhat enlarged.

"*1st June.*—P. 86. Sleeps well, and is much better in health. Ordered alterative medicine, followed by tincture of the muriate of iron and cod-liver oil, twice daily.

"*6th.*—P. 96. Has had more darting pains in the limb. General health continues good. Tumour not perceptibly larger since admission of patient into hospital.

"*7th.*—P. 80. Slept well. Chloroform having been administered. Professor Spence made an exploratory incision into the swelling, and discovered it to be a tumour, as diagnosed. The patient's pelvis was then brought well over the edge of the table, and held firmly by an assistant. Professor Spence next, grasping the soft parts with his left hand, entered the point of the knife at the front of the ischial tuberosity, and passing it obliquely upwards in front of the articulation, brought it out almost midway between the anterior superior iliac spine and the trochanter major, so as to form a large anterior flap. Having opened the joint by the first incision, while Dr. Gillespie abducted the limb, the disarticulation was effected, and a posterior flap nearly equal in size to the anterior one was cut from within outwards. Immediately thereafter, a sponge was applied over the posterior flap; Dr. Watson compressed the vessels over the brim of the pelvis. The vessels, including the femoral vein, were then ligatured, the flaps stitched together, pads placed over the anterior and posterior surfaces, and bandaged. When the effects of the chloroform had passed off, an opiate was given, but the patient continued very restless, requiring to be held down for some time. No reactionary hemorrhage took place.

"On examining the limb, the tumour was found to be of a grayish colour, of firm consistence, and of a medullary character. Microscopic examination of the adductor muscles of the thigh showed the nuclei of the muscular fibres to be greatly increased in number, and seemingly about to undergo cancerous degeneration. The fibres of the gluteus muscle showed fatty degeneration, but no proliferous cells."

It is unnecessary to give the details of the course of the cure; it is sufficient

to say that the next morning after the operation, the patient seemed to be rapidly sinking, but by the prompt use of external and internal stimuli, and careful watching, the patient was sustained, and by the 25th of the month convalescence set in and continued uninterrupted. The femoral ligature was withdrawn July 6, and the incision healed without the slightest bad sign.

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34. *Syme's Amputation of the Foot.*—Mr. HENRY HANCOCK, in his lectures "on the Anatomy and Surgery of the Human Foot" (*Lancet*, July 21, 1866), gives a table of 219 cases of Syme's operation, exclusive of those performed by Syme himself.

"Of these	144	were	performed	for caries.
"	22	"	"	accident.
"	2	"	"	gunshot wounds.
"	1	"	"	hypertrophy.
"	1	"	"	malignant disease.
"	1	"	"	necrosis.
"	1	"	"	frost-bite.
"	1	"	"	traumatic gangrene.
"	1	"	"	acute inflammation.
"	44	diseases not stated.		

Results.

13 suffered secondary amputation.
17 died.
183 recovered, and could walk well.
6, results not stated.

"Of the 13 amputations—in 8 the period between Syme's operation and secondary amputation is not stated; in 2, two months; in 1, four months, and in 2, two years intervened between the two operations. Nine of the amputations were performed upon patients who had undergone the primary Syme's operation for caries, and of these one was a confirmed drunkard, one patient had been primarily operated upon for traumatic gangrene, one two years previously for accident, and in the remaining two the disease is not stated.

"Of the 17 fatal cases, 4 died of pyæmia; of these, one had been operated upon for malignant disease, one for accident, one for gunshot wound, and in the fourth the primary disease is not stated. In 5 the operation had been performed for accident, one of the patients dying of pyæmia, as already stated. In 10 the operation had been performed for caries; of these, 1 died twelve months after the operation, 3 died of phthisis, and 1 died of exhaustion caused by diarrhœa.

"These are the results of this operation performed in civil practice: and they must be regarded as most favourable, especially when we consider that it has been restricted neither to classes, sex, nor age. Of the 219 cases, the ages have ranged from one to sixty-four years (although we read that Mr. Syme operated upon an infant aged five months), the youngest, as we have seen, having been operated upon by Mr. Pemberton, of Birmingham; whilst Mr. Marsden and Mr. Gant, of the Royal Free Hospital, and Mr. Nesbitt, of Wolverhampton, can claim the credit of having performed this operation successfully on the three oldest patients hitherto submitted to its procedure.

"In military practice it would seem to be equally successful. Staff Surgeon Gordon, of the 95th regiment, which suffered so severely at the battle of the Alma, thus writes to Mr. Syme: 'I have much pleasure in stating that several cases of amputation of the foot, as first proposed and practised by you, were performed after the battle of the Alma, and the results were most favourable. Those cases which came under my observation healed more rapidly than when the operation was performed at the lower third of the leg, and at the same time a much more useful stump was the result.'"

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35. *Mercurial Collodion in the Removal of Syphilitic Patches of Discoloration.*—M. LECLERC states in the *Presse Médicale Belge*, that a patient of his having tried alkaline, vapour, and sea-baths for the removal of those patches

which appear on the skin of syphilitic patients without effect, he recommended her to apply the following lotion, which removed them in a few days: Corrosive sublimate, fifty centigrammes; collodion, fifteen grammes.—*Lancet*, June 9, 1866.

OPHTHALMOLOGY.

36. *Employment of Anæsthetic Agents during Operations on the Eye.*—In this paper, M. Wecker considers three points: 1. What are the real inconveniences in the employment of anæsthetics in ocular surgery? 2. What are the operations in which such employment is useful and legitimate? 3. Which is the anæsthetic agent that should be preferred? With respect to the inconveniences attendant upon the employment of anæsthetics, M. Wecker agrees, with Professor Jacobson, of Königsberg, in the belief that most of these are due to the timidity with which they are administered, large doses capable of producing absolute muscular resolution being necessary in delicate operations on the eye. Still, he observes, it must be remembered that Jacobson practises in a region where, the use of alcoholic drinks being much more general, larger quantities of chloroform are admissible than they would be in warmer or more temperate climates. The production of obstinate vomiting, either during or immediately after the operation, has been attributed to the employment of chloroform; but, as Jacobson truly observes, such vomiting is never so sudden in its appearance as to take the operator by surprise, and that the eye may always be protected from its injurious influence by supporting it with a little charpie held in the hollow of the hand. The compressing bandage, the use of which is indispensable after most operations on the eye, sufficiently protects the organ during any efforts at vomiting which may then take place. To say the least, the objections against the use of anæsthetics have been exaggerated. Among the operations for which they are especially indicated are those in which all violent contraction of the muscles of the eye and eyelids may be the cause of immediate accident, in which the globe of the eye is largely opened. The flap operation for extraction of cataract here occupies the first place; and it is necessary to have performed a great number of extractions; but with the aid of and without the anæsthetic, in order to be able to appreciate how much, in the former case, the section of the flap is facilitated, and how much less trouble the operator experiences in giving to it the exact size and position. And if these are not considered as sufficient inducements to resort to anæsthetics, they will still be found valuable auxiliaries at the moment when it is sought to give issue to the cataract; for, in a subject who has been completely anæsthetized, and when the flap in the cornea has been sufficiently extensive, prolapsus of the vitreous humour, even to the slightest extent, may be prevented. Of this M. Wecker has fully assured himself by having in a great number of cases been able to effect extraction of the lens without opening the capsule, by merely sliding a curette under it, and without any loss of the humour. In fact, when all the muscles of the eye are in a condition of relaxation, and when, after the incision has been made, all intra-ocular pressure has ceased, the vitreous body has no tendency to escape, anæsthetics thus reducing to nothing one of the chief dangers of this operation. Thanks to them, also, all operations become practicable on the youngest children, rendering superfluous the various complicated apparatus which have been invented to fix the head in subjects of this age. We have no longer to dread, as heretofore, that the cries of these little patients will induce hernia of the iris, if, before the anæsthetic influence has passed off, we apply over the eye a sufficiently firm compress. Of course, anæsthetics are just as much indicated in painful operations on the eyelids, enucleation of the eyeball, &c., as in most other surgical operations.

As in operations which themselves cause no danger to life the safest anæsthetics are the most eligible, M. Wecker gives the decided preference to chemically pure rectified ether at 60°, which, indeed, for some time past, he has exclu-

sively employed. He regards the objections to this—that it requires more time to produce anæsthesia, and never renders it complete as quite unfounded—when the article employed is pure, and is from the first inhaled in very large quantities. The ether he employs comes direct from New York, and the patient is encouraged to inhale it as deeply as possible, disregarding the slight cough that is at first produced. The effect is produced almost as rapidly as with chloroform, while the resolution is so complete that extraction without opening the capsule can be readily performed. Moreover, the surgeon proceeds with an amount of security he can never possess when chloroform is employed to the extent of producing the complete resolution that is necessary for operations on the eye. When chloroform is employed, moreover, the inhalations have to be interrupted at the various stages of the operations, while with ether they may be proceeded with continuously to the very end, avoiding the sudden rousing up, and the dangerous irregular movements which may follow. Ether, then, should be exclusively employed in operations upon the eye.—*Brit. and For. Med.-Chir. Rev.*, July, 1866, from *Bull. Gén. de Thérap.*, May 30.

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37. *Von Graefe's Treatment of Cataract.* By A. SAMELSON, M. D.—According to VON GRAEFE's experience, diabetes is of much more frequent occurrence in cases of cataract than appears to be generally received. He does not in his practice regard immaturity as an essential obstacle to the removal of cataract. The retrogressive condition of the latter is by him considered much more to darken the prospect of thorough success; and a form which he appears prognostically to dread more than any other is that of posterior cortical cataract, from its being mostly accompanied by other and more serious morbid changes. Among the local circumstances of inauspicious significance, it is especially the small-sized cornea which is looked upon with misgiving. In capsulo-lenticular cataract, the opaque capsule is pretty frequently removed by itself, immediately before the extraction of the lens. As regards instruments, in the bent cystotome, with its fleam, in the one specimen looking to the right, in the other to the left, we saw a most useful auxiliary for upwards extraction. The curette preferred for most purposes is a curved spoon, the construction of which is a sort of compromise between Waldau's and Critchett's instruments. Repeated introduction of the curette into the anterior chamber, which has here always been held in abhorrence, is most religiously abstained from. A very light but efficient kind of manacles, consisting of two firm bands, an inch wide, buttoned about the wrists, and fastened by a tape to the foot-end of the bed, is employed after cataract-extraction, to ward off injury by the patient's own hands.

A proceeding which seems to be in special favour with Von Graefe, and which we have witnessed in a pretty large number of cases, is the formation of what he calls a *diametral pupil.* This is obtained by superadding an upward iridectomy, mostly just before the act of extraction, to the iridectomy downwards performed some weeks previously; or *vice versâ*, as the case may be. A large vertical gap is, in eyes thus operated upon, seen to replace the former pupil. The proceeding is pointed out as the best means for thorough extinction of the action of the sphincter. It is needless to say that the plan is not wantonly adopted, but only resorted to in suitable cases. It appeared to us as a thing very apt to be carped at; but remembering, as we do, those unfortunate cases of extreme vulnerability occasionally met with in cataractous eyes, in which such a measure is most likely to prevent mischief, we think that others, remembering as much, will probably become not only lenient critics, but thankful imitators too. We give the following case. The patient had had extraction performed on his left eye. The imperfect result was ascribed to the influence of syphilis, which had not entirely left the system at the time of the operation. The right eye, now about to be operated upon, had likewise been the subject of iritis, as a residue of which, a synechial band appeared skirting the top of the large gap which appeared within the lower half of the iris, the production of a first iridectomy. A second and equally extensive one was now superadded, whereupon the capsule was dilacerated, and the cataractous lens attempted to be removed with the spoon. It issued in two parts, which, put together, showed the nucleus

and the cortex immediately surrounding it to have come away complete. Much remaining surface-matter, however, was gradually expelled by pressure on the sclerotic with the spoon. The adhesion referred to had, in the act of dilaceration, been torn across with the sharp hook which, in this case, was preferred to the cystitome. Whenever the eye happens to jerk whilst the spoon is being introduced, the caution is observed and enjoined, quickly to follow the movements of the former, as the only chance of avoiding rupture of the hyaloid fossa.

Very exceptionally only, and then for the most part at the urgent desire of the patient, extraction is performed on both eyes in one sitting. We were told by Professor von Graefe himself of the case of a high dignitary, in which the faultless progress of the operation on one eye induced him forthwith to extract the lens from the other; this was equally accomplished without a hitch, when, nevertheless, both eyes were lost, so far as regards useful vision, by speedily supervening suppuration—an event which, manifestly arising from systematic causes, could not further be accounted for but by this vague assumption. On the other hand, we witnessed ourselves a most successful bilateral extraction in a Swedish parson, some 60 years old, of commanding presence, who, loth to extend his stay or undertake the long journey a second time, insisted upon having both eyes operated upon in immediate succession. Another case of bilateral operation, for congenital cataract, in a child, was the following. On the left eye, linear extraction from the outer side was resorted to; the iris prolapsed; dilaceration was effected with the hook; the capsule was found tough, and but very little lenticular substance was present, which, too, could not be completely evacuated. By dint of friction on the closed eyelids, the iris returned; but the pupil, noways duly black, did not quite resume its former regularity either. After this, discission, freely performed, was the method chosen for the left eye. Here, from a likewise very tough capsule, a much larger quantity of lenticular matter came forth, which now pressed the iris forward into the anterior chamber. Before the case was dismissed from the couch, a piece of iris was excised from the right eye.

Perhaps, further, of some interest are the following three cases of unilateral extraction. In the first, a middle-aged man, the operation was performed on the left eye, and, as usual, without chloroform. In this case, owing to the patient exerting his orbicularis muscle just at the most critical moment, some vitreous humour, though but a very moderate amount, escaped; and the pupil could not entirely be freed from cortical masses. The case, though not an extraordinary one, was instructive, in the operator's own opinion, as showing the usefulness of chloroform, if time will permit of its employment. The next case is that of a noble lady, of 65 years of age, whose left eye had, at the hands of an eminent German professor of ophthalmology, undergone the operation of iridectomy for glaucoma, in the course of which—chloroform not being used, which Von Graefe likewise but exceptionally employs in glaucoma—the capsule was injured. The traumatic cataract thus produced afforded evidence of the unmanageableness of the patient, whose case was beforehand pointed out to us as a most unpromising one. Before the anæsthetic told upon her, she gave continual vent to her anguish. A large upward iridectomy was made; and the capsule, although accessible from the original injury, was expressly dilacerated afresh. While inserting the spoon, the operator called our attention to this as the critical moment. The neucleus, together with a moderate quantity of cortical substance, came away, but was immediately succeeded by some vitreous humour; the play of the orbicularis just supervening when the cataract made its exit. Thorough narcosis had, again, not been induced. In this case, the operator held that the zonula had been ruptured before the operation. Only a scanty amount of vitreous humour, however, had escaped. The corneal wound was well adapted; but the pupil was not quite black, because occupied by blood. Several times the eyelids were now widely separated, and the patient directed to look downwards, which did not lead to any further escape of vitreous humour. The right eye of the patient was the seat of chronic glaucoma, with a contracted field of vision; whilst in the left eye the visual field was normal; and on that account the operation was ventured upon. The case did well. In the third case, one of accidental cataract in a youth, in which chloroform was dispensed

with, a glistening foreign body became visible after dilaceration and the escape of some soft lenticular substance. The foreign body was, together with some more solid cataractous matter, very carefully removed by the spoon, and the pupil remained perfectly clear.

In the hospital, I saw still a female patient, operated on before I arrived, with a pupil partly occupied by capsular remains, in the cataract extracted from whose eye a *cysticercus* had been found by Von Graefe—an occurrence of which we hear that no instance has yet been recorded.

We have seen every method of operation for cataract which is still in use practised at the Clinique, except, of course, reclination and depression; and we may perhaps add, except the method of Jacobson, as chiefly characterized by the induction of thorough chloroform narcosis prior to the steps of the operation. But what we have likewise failed to witness within the space of more than four months at Von Graefe's clinique is even a single case of flap-extraction. To account for this, at first sight, certainly very strange omission, we have to enter on the exposition of a method of operation recently excogitated and practised by Von Graefe, which, it is our belief, will be very generally appreciated, and, if approved by experience, form another solid accession to the wealth of ophthalmic surgery. At the last meeting of the Ophthalmological Congress at Heidelberg, Von Graefe has, we hear, made a communication on the subject; a substantial treatise on which will be published in the forthcoming volume of the *Archiv für Ophthalmologie*.[1] We have been fortunate enough to witness, as it were, the incubation of the new method; attend at its first trials; and observe its gradual perfection and thorough establishment. When we had witnessed at the clinique a number of cases subjected to modified linear extraction, performed advisedly in strict accordance with the practice and precepts of Critchett and Bowman, we heard Professor von Graefe broach the idea—to throw or fling (as he colloquially expressed it) the lens out of the eye without the intervention of the cumbrous and anything but inoffensive spoon. Within less than a fortnight after this, we found him supplied with the instruments in his opinion requisite for the realization of his idea. Thus provided for, proceedings commenced; and by rapid degrees perfecting and completing his armoury, in the course of about three months (at the end of which the long vacation set in) he had performed the new plan upwards of sixty times, at about forty of which we had the good fortune to be an intensely interested spectator. We have thus seen the hand of the operator, in the execution of a novel act, become more and more firm, until it had attained to the freedom habitually attending his surgical handiwork. During the first period of trial, we frequently heard him remind the bystanders that what they were witnessing were yet "*des essais*." As regards the nature of the cases, perhaps only the first half of them were specially selected for the purpose. The object being a thorough and extensive trial of the merits of the new scheme, very soon every description of cataract, which else would have fallen within the scope of either flap or spoon-extraction, was subjected to the new proceeding. In this, the administration of chloroform was but seldom deemed necessary.

The steps of the operation, as performed in my presence, were as follows: The eyelids having been separated by the stop wire retractor, and the conjunctiva at the bottom of the cornea seized with toothed forceps, the point of the knife devised by Dr. Waldau for the removal of prolapsed iris, the edge looking upwards, is inserted in the sclerotic, at the distance of half a line from the margin of the cornea and about half a line below the plane of its vertex. When the point has been moved straight on so far as to appear in the anterior chamber, it is directed downwards, and pushed on towards the pupil. As soon as the point is seen above the pupil, it is advanced in an upward direction until it has reached the spot directly opposite in a straight line to that where it first appeared in the anterior chamber; carried onwards a little further, it is made to emerge through the sclerotic at the same distance as its insertion was from the cornea. The knife is now pushed on in an horizontal direction towards the

[1] The paper has since appeared, and a translation of it is in course of publication in the *Ophthalmic Review*.

great angle, until its edge has entirely cut through the corneo-scleral junction, when it is turned edge forward to divide the wall of conjunctiva which is still before it. For, the incision falling quite in the limbus corneæ, and often, we believe, lying altogether in the sclerotic, causes the conjunctiva to rise above the knife as if distended by emphysema, and thus a conjunctival flap to be formed. More or less bleeding, sometimes considerable, from the conjunctiva, is the immediate consequence. The length of the incision, according to Von Graefe's measurement on the dead subject, is from four and a half to five lines—*i. e.*, somewhat larger than any which can be produced by the largest lance-knife as employed in the Moorfields method; moreover, the course of the incision is more strictly linear than that of any obtainable by the lance-shaped knife.

The next step in the operation is the laying down with iris-forceps of the conjunctival flap over the top of the cornea, in order to fully expose the incision. Thereupon the hand of the assistant glides under that of the operator to take hold of the fixing forceps, whilst the surgeon now seizes a pair of delicate forceps and scissors to remove a moderate piece of iris. This done, and the fixing forceps having been resumed by the operator, he clears the pupil, if necessary, from blood effused in front of it, lacerates the capsule extensively with the curved cystitome, and mostly endeavours to effect the exit of the cataract by gentle pressure with a Daviel's curette on the sclerotic above the incision. If this remain unsuccessful, he pushes a bent hook on the flat about two lines deep into the posterior cortex, whereupon the point of the hook is turned forwards, and, by a slight upward movement of the instrument, the cataractous lens is lifted out of the wound. This being accomplished, the fixing forceps and retractor are expeditiously removed from the eye. After a moment's waiting, the eyelids are again separated by the hands of the surgeon; and whatever is found to remain of cortical substance in the pupil, is, by alternate sliding over the globe of the upper and lower lids, made to issue as completely as possible. The reversed conjunctival flap having been returned to its original position, and the wound cleared by forceps of the filamentous coagulum which is very generally found to overlie it, the eye is closed and dressed with the protective bandage. The after-treatment does not in any respect differ from that generally observed after extraction. Of the three hooks in progress of time devised for the removal of the lens, the sharp one, calculated to penetrate into the neucleus, is but seldom called in use; the object of the new plan being rather to promote the gliding of the lens, if possible, by mere external pressure, than to draw it out of the wound. Again, of the two blunt hooks, the one presenting some surface, though differing in its mode of action from the sharp hook, is yet, for the same reason, but rarely employed; so that there remains only the blunt hook which is slender throughout as the instrument ordinarily used in lieu of the discarded curette. It is needless to say that, in the event of rupture of the hyaloid fossa, resulting in the escape of vitreous humour before the removal of the cataract, extraction is nevertheless insisted upon. It is then effected with the necessary despatch by means of the spoon.

Of the sixty operations before referred to, not one was an utter failure—*i. e.*, ending in the entire loss of vision; though we cannot doubt the success obtained in the various cases must have varied in degree. According to recent news, Von Graefe has performed upwards of one hundred operations on the new plan; and amongst this total, there are no more than five or six cases requiring an after-operation, the remainder having furnished quite satisfactory results. The advantage of the proceeding appeared, in Von Graefe's view, mainly to consist in the precisely linear character and the peripheral situation of the incision, enhanced in value by its considerable length, and further by its subconjunctival position. As a point of much importance, in regard to the immediate consequences, we have heard him state that the prejudicial proliferation of the intra-capsular cells, so habitually observed after scoop-extraction, appeared to be in a great measure discountenanced by the new proceeding.

As regards the technical steps of the latter, various points are, according to Von Graefe's own admission, borrowed from the proceedings of others—viz., Desmarres and Jacobson. What we know to be original is the mode of performing the incision on the one hand, and the suppression of the obnoxious

spoon by the less offensive hook on the other. We have endeavoured to describe the operation as we have seen it performed. It may be and is not unlikely to have been modified in various points since. As the coming year will see the new method put to the test far and wide, the voice of the profession will ere long begin to be heard on its merits.[1]—*Reminiscences of Four Months' Stay with Prof. A. Von Graefe in Berlin, in Brit. Med. Journ.*, April 21, 1866.

38. *Detachment of the Retina; its Causes and Treatment.*—Mr. HAYNES WALTON, in a paper read before the Harveian Society, of London, observed that "Detachment of the retina from the choroid might be the result of an accident, such as a blow on the eyeball or about the orbit; but for the most part, it could not be traced to an injury. It was the physical effect of fluid effusions of various natures, chiefly, however, serous, or of firm solid deposits, or of malignant disease. It was the class of cases produced only by the pouring out of serum, 'dropsy under the retina,' that he should consider. This separation of the ocular tunics was of common occurrence, and was one of the greatest mechanical changes that occurred in the eye, and yet was one without any external or objective symptoms. It was only by an ophthalmoscopic examination that the true nature of the case could be made out. There were undulating folds of the retina, or bulging of the retina in a tense form, the colour of the membrane varying from a light bluish or grayish tint, to a dead white, which was characteristic of old detachment. The recognition of the retinal vessels removed doubt of the diagnosis. The detachment might be partial, destroying sight to a limited degree, or general, totally annihilating vision. The tendency in the affection was always to become worse, so that a worse class of cases could not occur. There was no opportunity for the natural reparative power. It was Mr. Walton's conviction, however, that there was scope for treatment and opportunity for success; and that this consisted in general and local measures; but the treatment should be commenced early, or little benefit could be expected. He deprecated the idea that a mere operative proceeding could be curative, dwelt on the pathology of the affection, and showed that it was the result of morbid actions taking place within the eye, of an inflammatory nature, and mostly of an asthenic form. The retina and the choroid being but slightly connected, there was little or no resistance to extravasation, which quickly gravitated from one part to another. The separation of the retina after an accident he explained in the the same way, there being first, the inflammation and then the exudations between the retina and choroid. It was characteristic of the affection to proceed painlessly, and without any other symptom but that of impaired vision, the peculiarities of which were carefully pointed out. A remarkable case was given in illustration. A patient was brought to Mr. Walton with detached retina in one eye of old standing, and inflammation of the interior of the other eyeball producing among its effects haziness of the vitreous humour, so that the fundus of the eye could not be seen. After general treatment the vitreous humour cleared, the shreds and floating particles in it gradually disappearing, and there was discovered partial detachment of the retina. With all this morbid action in the interior of the eye, there was not the slightest trace of disease in any of the external tissues. This was just the kind of case, Mr. Walton said, that he had been looking for. In the one eye certain conditions had been developed, that left, as one at least of its effects, a separated retina; in the other, was to be seen that intensity of internal action, which, in all probability, was a parallel of what had taken place in the first, and which in the end separated the retina. He operated on both eyes, and evacuated the subretinal fluid. He found it necessary to operate a second time on the eye recently affected, at the interval of a month, having up to that period still continued the general treatment,

[1] From a communication received a month since, I learn that, in his last fifty cases, Professor von Graefe has been able entirely to dispense with the hook, effecting the removal of the cataract by mere external pressure (the so-called "slide-manœuvre"). Chloroform had of late been hardly employed at all in the operation, and escape of vitreous humour occurred in five or six per cent. of the cases only.

which consisted of small doses of mercury with hyoscyamus, and a mixture of iodide of potassium with cinchona. The result was, in the eye with the acute disease, the restoration of useful vision. In that which had been attacked two years before, no benefit ensued. Mr. Walton gave a detailed account of his method of operating, which was by puncturing the sclerotic and leaving the retina untouched, the fluid escaping between the sclerotic and conjunctiva. He assigned several reasons for preferring this to puncturing the retina with an endeavour to cause the effused fluid to escape in the vitreous humour, as practised bp the Germans. He gave the general result of many cases in which he had adopted this simple treatment. In the mass of them no benefit resulted, and indeed he expected little, because they were chronic cases. In some recent cases, however, he had not the slightest doubt of having an amount of useful vision."—*Brit. Med. Journ.*, June 16, 1866.

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39. *Spontaneous Effusion of Blood into the Vitreous Humour.*—Mr. R. H. McKeand relates (*Brit. Med. Journ.*, June 16, 1866) the following example of a very rare accident.

W. F., aged 35, entered the Manchester Eye Hospital, October 9, 1865. He said he went blind suddenly with the left eye, about four days previously, the sight having been always good in both eyes previously. He first noticed something black passing across the eye, and thought that some coal-dust had got into it. A few hours afterwards it went quite dark, and when admitted he could only read No. 20 (Jæger's test type). On ophthalmoscopic examination large quantities of blood were seen floating about the vitreous humour. He was ordered three grains of hydrargyrum cum cretâ in a pill; two to be taken three times a day.

Oct. 16. The mercurial was stopped on account of its action on the gums. Nothing else was ordered. The eye was greatly improved.

25*th.* The eye was quite well; he could read No. 1 at the normal distance (twelve inches). Ophthalmoscopic examination showed nothing abnormal. He was discharged cured.

Remarks.—When first seen, both eyes presented the same healthy appearance externally, both pupils acting simultaneously to light. No mischief could be detected until he was placed under the ophthalmoscope, when its character was at once revealed. He had received no blow, and could assign no cause for the sudden defect of vision.

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40. *Nyctalopia.*—Dr. F. E. Junker states (*Med. Times and Gaz.*, July 21, 1866) that "in low marshy localities, where ague and other malarial fevers are prevalent, when cool nights succeed hot days in the tropics as well as in more temperate climates, cases of night-blindness are met with either in its genuine form or with intermittent fever. I shall here speak only of the former. In such cases I found the retina slightly discoloured, and the vitreous humour somewhat cloudy-opaque. The patients are generally persons from the poorer classes, ill-fed, and badly housed, living close to banks of rivers, near marshes, and artificially irrigated fields. I have seen cases of this form of nyctalopia in the rice-fields of Lombardy, an the Chagres River in the Isthmus of Panama, in Nicaragua, on the Tampico in Mexico, and on the low banks of the Essequibo in Demerara. In the latter country I found European settlers and Chinese and Bengalee coolies among the sufferers; negroes appear to be exempt—at least I never heard of any case amongst them. I hear also from good authorities that such cases occur in the neighbourhood of the two Hungarian lakes, on the banks of the lower Danube and the Theiss, and in the Pontine marshes. I recollect having seen a few cases among the outdoor patients of the Ophthalmic Clinic, at Vienna, who came from a village on a small island of the Danube. In the treatment of this complaint we possess an almost specific remedy in camphor. Three five-grain doses of it daily seldom failed, except in old cases combined with ague, when quinine was resorted to."

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41. *Removal of the Lachrymal Gland for the Radical Cure of Inveterate Cases of Lachrymal Abscess.*—Dr. J. Z. Laurence, in a communication presented to the British Medical Association at its late meeting, stated that he did

not claim priority of the practice, for P. Bernard performed the operation twenty years ago. Still it had not been systematically pursued. The first case in which Mr. Laurence extirpated the lachrymal gland was that of a young man whose eye constantly watered, from the lachrymal puncta and canaliculi having been obliterated by caustic soda. After fruitless efforts had been made to restore the perviability of the canaliculi, Mr. Laurence removed the lachrymal gland. The result was highly satisfactory. Within four days, the watering of the eye had entirely ceased, and it was not unduly dry. Six months after the operation, the patient was again seen, and the relief was found to be permanent. The facility and success of the operation stimulated Mr. Laurence to inquire how far it was applicable to cases of inveterate lachrymation generally. In the prosecution of this inquiry, Mr. Laurence had removed nine lachrymal glands in eight cases, which he reported in detail. It would be sufficient, however, to notice here the results which had followed the operation. The principal symptoms in each case had been constant watering of the eye, repeated lachrymation, abscess and fistula of the sac. The duration of the disease varied from one to twenty-five years. In most instances, the ordinary treatment of probes had been ineffectually tried. After removal of the lachrymal gland in these cases, the disappearance of the watering of the eyes was immediate and permanent, as far as Mr. Laurence's observations extended, some of which had lasted for a period of six months. It did not appear that the operation had caused any undue dryness of the eye; but in every case it had remained normally moist after the operation. Mr. Laurence remarked, that another consequence of removal of the lachrymal gland for abscess of the sac was, that the abscess healed, and the discharge of pus from the puncta ceased. Mr. Laurence considered removal of the lachrymal gland applicable to those cases of inveterate lachrymal fistula which other methods, after a fair trial, have failed to cure; the operation offering the best prospect of a radical and permanent cure. Mr. Laurence concluded by a description of his method of performing the operation. He makes a transverse incision of three-fourths of an inch in length into the orbit over the upper and outer third of the orbital edge; he then divides the external commissure of the lids with scissors; and, by connecting the outer ends of the two incisions, forms a triangular flap, which is thrown up. The lachrymal gland is thus easily exposed, secured by a sharp hook, drawn forwards, and removed. The edges of the wound are then united by sutures. The linear scar of the incision is inappreciable, it being lost in the folds of the upper eyelid.—*Med. Times and Gazette*, Sept. 1, 1866.

MIDWIFERY.

42. *Dilatation of the Perineum.*—Dr. JAMES MORE relates (*Edinburgh Med. Journ.*, June, 1866) the following case to show that the perineal structure possesses an inherent power of dilatation:—

On the 7th July I was asked to attend Mrs. L., about to be confined of her first child, and on examination found the head very high up, and almost out of reach. The pains were good and regular from the first; but finding, after waiting some hours, that the head did not descend, indeed seemed fixed, I again made a careful examination to ascertain the cause of obstruction, and was struck with two things:—

1st. The great thickness and resistency of the perineum.

2d. The regular straining and relaxation of this structure, which took place during each pain, and its regular return to its normal state the moment the uterine contractions ceased.

Knowing that the doctrine of the schools teaches that this same dilatation is due to the pressure of the child's head on the perineal structures, my attention was at once arrested by this apparently peculiar case, and I consequently determined to watch the whole process narrowly.

The report of the case at this stage was as follows: The external parts moist, but rather narrow, the fourchette being peculiarly thick.

The head high up at the pelvic brim, and presenting such a surface to the touch as to make me quite undecided as to the exact position it might take in the pelvic cavity.

The uterine contractions strong, vigorous, and occurring at regular intervals of five minutes. As soon as the uterus began to contract, I found the thick perineum, or rather fourchette, gradually thin out and dilate under my finger and thumb, and on the pain subsiding the structure gradually returned to its former size and resistance. As the case went on, this dilatation or straining became more decided, while the return to its normal state was less perfect.

The head, after some hours, reached the hollow of the sacrum, and the labour proceeded to its termination in the usual way.

The conclusions I arrived at from the above facts are these:—

1st. Nature has provided the perineal structure with an inherent power of dilatation, and that this dilatation does not always depend on the pressure of the child's head.

2d. This dilatation takes place during a uterine contraction.

3d. When the uterus is quiescent, the perineal structures return to a state of contraction.

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43. *Laceration of the Uterus.*—Dr. Thomas Radford read (May 2d) before the Obstetrical Society of London, a paper on this subject, in which after briefly alluding to the views of Hunter, Denman, and Douglas on this most dangerous complication of labour, related minutely the histories of nineteen cases which had fallen under his notice. Of this number, in eleven the ages registered were from 21 to 40 years, and it was found that the accident occurred more frequently between the ages of 39 and 40. The number of labours which each woman had undergone varied from the first to the eleventh; and it was shown that laceration of the uterus happened most frequently in women pregnant for the eighth time, and that in those *enceinte* for the first time the accident took place quite as often as it did in any of the other cases which were registered. The duration of the labour from its commencement to the occurrence of laceration (though in some cases not exceeding three or four hours) was generally from ten to thirty hours. Of the various causes or conditions mentioned as producing laceration, slight contraction at the brim of the pelvis appeared to have been the most frequent. The author considered that when the form of the pelvis was only slightly contracted, the os and cervix uteri partially descended during labour into or a little through the aperture of the pelvis, so that, as the head of the infant was forced down, the uterine tissues became fixed between this body and the pelvic bones. The fixity of this structure actually formed a *point d'appui* from which the uterine fibres during contraction forcibly pulled; and the great probability was that sooner or later the tissue either directly tore, or, being first contused and softened, yielded. As regarded the situation of the laceration, the cervix uteri was the part most frequently affected, and sometimes with it the body of the organ was also implicated. In eleven cases the laceration was longitudinal, in three transverse, in three oblique, and in one circular. Of the nineteen cases, three recoveries took place, or nearly sixteen or seventeen per cent. Dr. Radford, in his concluding remarks, observed that when we contemplated the frequent fatality of laceration of the womb, we were led to inquire whether there were no symptoms which showed themselves as universal precursors of this dreadful catastrophe; and if there were, did we possess the means of prevention? In all the cases he now brought before the Society, there could not be found any with premonitory symptoms which of themselves would warrant any operative measures being taken in order to avert the impending danger. Nevertheless, he thought we should carefully consider all the contingent circumstances of protracted labours, and especially of those which were prolonged by mechanical impediments; and whether they were produced by relative disproportion of the capacity of the pelvis to the size of the fœtal head; if so, we should adopt measures of timely delivery.

Dr. Graily Hewitt acknowledged the great value of Dr. Radford's paper,

but could not agree in the antiphlogistic treatment mentioned by the author. He (Dr. Hewitt) concurred in the opinion that there was an absence of uniformity of symptoms in these cases, and strongly urged the necessity for early artificial aid in some cases of protracted labour. He related a case of concealed hemorrhage, in which the symptoms were closely allied to those observed in ruptured uterus.

Dr. PLAYFAIR could not approve of the treatment which had been adopted in those cases where the fœtus had escaped into the peritoneal cavity. He thought a much better line of treatment would be to perform gastrotomy. He knew of twelve cases in which this operation had been performed, and in some with satisfactory results.

Dr. BRAXTON HICKS said that, with respect to the symptoms of rupture, it was generally asserted that recession of the head was a constant symptom, but that he had never seen a case where this had taken place. He believed there were many more cases of ruptured uteri that we were cognizant of. Dr. Hicks believed that one of the greatest safeguards against rupture was the use of chloroform.—*Med. Times and Gaz.*, July 7, 1866.

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44. *Cases of Rupture of the Uterus.*—Dr. GORDON related the following case to the Obstetrical Society of Edinburgh (March 28th, 1866): "On the 25th of January last, about 11 o'clock at night, I was summoned to attend this poor woman in her confinement of her eighth child. The patient was a middle-sized, plump, healthy woman, thirty-three years of age. On my arrival at her residence, about 12 o'clock, I found she had been in labour three or four hours previously. Her pains were not frequent, recurring at intervals of about fifteen minutes, not by any means powerful, and had very little influence on the os uteri; she evidently, as she termed it herself, 'was not bad enough yet.' On making an examination, I found the head presenting, but high up above the brim of the pelvis, and the os dilated between a half crown and five-shilling piece. Being some distance from home, I made up my mind to remain with my patient and watch the progress of the case, hoping that the uterus would soon begin to contract more powerfully and speedily terminate the case favourably. In this I was disappointed, as during the next two hours her pains increased but slightly either in force or frequency; the os had dilated a little, but the head descended none—seeming to rest somewhat against the pubic bone. By 3 o'clock in the morning, matters changed a little for the better, her pains became more frequent as well as stronger, and the occiput got relieved from its fixed position, took the axis of the pelvis, and began to descend. I hoped, now soon, to see a happy and favourable termination of the case. Lest, however, my hopes should again be disappointed, I immediately despatched for my instruments, expecting by the time the messenger could have returned that the head would be in a favourable position to enable me to apply the forceps if need be, and deliver the woman; but before the messenger returned, matters became worse, her pains became weaker and less frequent, and now for the first time she began to say that her pains were changed, that she had them more in her 'belly than her back,' but that they were not constant, 'just the same kind of pain she had in her back.' I examined with my hand over the abdomen; she complained of no tenderness whatever, and there was nothing unusual to be felt at the time. She continued having pains, but slight, and still in front: and to my annoyance the head began to recede instead of advance. I again laid my hand over the abdomen, and now found the uterus contracting with some distension of the abdomen, principally flatulence. Feeling convinced that something had gone wrong, and suspecting rupture of the uterus had taken place, I again and more carefully if possible examined the abdomen. There was now no longer room left to doubt as to the nature of the case, for the uterus was still contracting, and the extremities of the child were to be felt moving about in the cavity of the abdomen; and on making a vaginal examination, there was a slit to be felt in the posterior lip of the os; yet there was no unusual discharge per vaginam. Feeling myself at my wits' end, and being near Edinburgh, I at once rode into town, called on Dr. Keiller, and stated my case to him. He, to whom I am much indebted, at once kindly offered to visit my patient with me. On our ar-

riving at her house, Dr. Keiller carefully examined the patient, and satisfied himself of the nature and extent of the accident. He recommended to deliver by version, which operation he easily performed, except that there was a good deal of traction required in bringing the head over the brim of the pelvis. The child was still-born, and the mother survived the accident only thirty-six hours. There was a considerable prominence of the os pubis, as afterwards ascertained; but considering the child-bearing history of the patient, together with the nature of the labour, slow and powerless, I do not consider there was any urgent demand for more active measures being used in the earlier part of the labour. She had her first child when twenty years of age, a girl, still-born, no instrument used; the second, a boy, also dead, forceps used; the next three, girls, easy labours, living children, and no instruments; the sixth, a boy, living child, forceps used; the seventh, a boy, still-born; and the eighth and last as already given. Considering this history of the case, I am inclined to think that the cause of the rupture was not so much the protuberance already referred to, but softening of the walls of the uterus consequent upon repeated child-bearing.

"Dr. Keiller stated that when he was called to see the patient he found her in a state approaching that of collapse. On examination the contracted uterine tumour was lying forward, while the child had passed into the abdominal cavity through an opening in the posterior wall of the cervical portion of the uterus. The opening was still gaping, and on passing the hand through it he felt the head close to the rupture. The cord was not pulsating. The intestines of the mother were in contact with the limbs of the child. He easily delivered the woman by turning, but considerable traction was necessary to extract the head. There was no extension of the laceration during the somewhat forcible extraction. Dr. K. thought that gastrotomy was a better procedure in some cases than turning, and more likely to diminish the mortality. Out of 60 reported cases of rupture of the uterus 57 were fatal, 53 being delivered by turning, forceps, or craniotomy, the other 7 were delivered naturally. Gastrotomy cases have been more successful. M. Dufeillay narrates 12 cases of gastrotomy, and only 1 fatal. Dr. Winckel relates a case where the uterus was twice ruptured, and where gastrotomy was performed successfully on both occasions. When the child is turned and dragged back through the laceration, there is a risk to the mother from the retention of the discharges, as well as from hemorrhage. As a general rule he would recommend turning when the rupture was at the cervix, and gastrotomy when in the body of the uterus. Dr. K. mentioned one case which he had seen with Dr. Moir, where the patient was delivered by gastrotomy, and rallied for some time. Dr. Keiller read the following letter which he had received from a gentleman who had heard him refer to Dr. Gordon's case immediately after its occurrence. The note appeared worthy of being read on the present occasion.

"'In your lecture yesterday you spoke of a case of ruptured uterus—the treatment pursued, the results of the treatment, and the plan of procedure you would adopt if another such case should occur. I thought you would not think it improper if I should narrate the following case which happened in the hands of Dr. Vail, a practitioner in my native country, New Brunswick, and one of my neighbours. I may mention that Dr. Vail is quite reliable in these matters, having had a very long experience, and having enjoyed a first-rate reputation in this particular branch of the profession. A woman, thirty-three years old, short stature, very fleshy, fell into labour at the termination of her third pregnancy. He examined, and found the head presenting, and proceeding regularly through the pelvic cavity. The pains were regular, of full but not dangerous force; there was not, he thought, the slightest reason to suspect any danger arising from the mere force of the pains. On introducing his finger to ascertain the condition of matters, he was surprised to be unable to find the head of the child. On carefully thinking over the matter he suspected the cause, and on introducing his hand and arm he felt two scroll-like bodies, smooth, which he suspected to be the walls of the ruptured uterus rolled up on themselves. He found the child lying among the mother's intestines, seized a foot, and by the exercise of great force succeeded in drawing the child through the natural passages. The woman was of course very much exhausted, but by the

use of gentle restoratives she rallied, and by the careful employment of opium, with good but easily digested diet, she finally came around. Of course, perfect rest and the other necessary adjuvants were particularly enjoined and observed. He informed me that no unfavourable symptom occurred until the eighth day, when she suddenly complained of pain and tenderness in the abdomen, but this was promptly controlled by hot fomentations and opium. She was able to walk about in five weeks from the occurrence of the accident.'"

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45. *Evulsion of the Umbilical Cord occurring at Birth.*—Dr. G. de GORREQUER GRIFFITH relates (*Medical Press and Circular*, Aug. 8, 1866) the following example of this very rare accident:—

"July 8th, I was summoned to attend Mrs. ——, who was taken in labour with her first child. I attended almost immediately, and on my arrival I was told that they did not think I should be required just yet, as she had been in pain only for the last two hours. I forthwith entered her room, at the very moment I did so she had a strong bearing-down pain, and I told her that she had better lie down as soon as the pain was over. While she was yet in pain she attempted to get on the bed, but as she made the effort she called out that the child was in the world, and before I could endeavour to catch it, the little thing fell upon its head with some force, and rolled upon the floor. I noticed that the child was quite livid, that the cord had been torn out from the abdomen, and that the child was apparently lifeless. The blood spirted out from the umbilical aperture, and before I could render any assistance some little quantity was lost. The child seemed to be in a state of syncope, very soon lost its livid hue, and became all over deadly pale. As quickly as I could I seized the integument surrounding the umbilical aperture (there was not a vestige of the cord), and tied it as tightly as I could. Fortunately the state of syncope in which the child lay enabled me to apply the ligature tightly, no pain being felt, and so effectually that it did not slip of, nor was afterwards disturbed when the child began to cry and to move. No ill effect obtained to the mother, and the placenta was easily removed."

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46. *Chlorate of Potash in the Treatment of Ovarian Disease.*—Mr. W. CRAIG records (*Edinburgh Medical Journal*, Nov. 1865) the two following cases successfully treated by chlorate of potass:—

CASE I.—Miss S., of Ayr, is of middle height, sallow complexion, and apparently of sound constitution. The tumour is on the left side, rising out of the iliac region. It is about the size of a child's head of a month old. The patient states that the tumour is sore when pressed, also during defecation and micturition. She menstruates regularly. It is free in its attachments, and rolls from side to side as the patient turns in bed. It is about five years since she first observed the enlargement, and it was about a year after this when she first applied for medical advice. She had the counsel of many medical men, and took many medicines, but received benefit from none of them. She was under the treatment of one medical man during the twelve months immediately before coming to me. This gentleman used many medicines and numerous external applications, all without any beneficial effect. He then, with the consent of other medical men, resolved to perform the operation, but he died when preparing for it.

When she came to me I immediately put her upon a saturated solution of chlorate of potass—a dessert-spoonful thrice daily. She stated that she had only taken the medicine two or three weeks when she felt a gradual improvement in her general health. The tumour gradually diminished in bulk till, at the end of ten or twelve months, it disappeared. After the tumour had been so far reduced as not to be felt through the parietes of the abdomen, it could be felt in its greatly reduced size lying close to the uterus. About this time it was about one and a half inch in diameter. Subsequently, the tumour has disappeared completely, with the uneasiness and symptoms depending on its bulk, and she has since continued in her usual health.

CASE II.—Miss C. from London. The attention of this lady was first called to her complaint when taking a bath in June, 1861. At this time she felt a

swelling rising from the right side of the pelvis. It was then about the size of an egg, and moved from the side to the middle of the abdomen. There was no pain in the tumour when the body was at rest, but in quick walking and some other forms of bodily exertion, it seemed as if bound by a light network all over the lower part of the right side. There was frequently a dull pain in the iliac region, and more rarely a sharp, stinging pain; but when at rest, or in ordinary walking, there was no pain. The patient states that her health was very sensibly affected by it. "I lost strength and tone, and became listless. The tumour grew rapidly from June to September, but after this the enlargement was slow in its progress. The tumour till now was always movable, but subsequently it became more fixed."

She came expressly to Scotland to consult an eminent practitioner, and was under his treatment two months of the summer of 1862, and nearly as long in the same season of 1863.

It was in the autumn of 1863 that she consulted me. On examining the tumour I noted no particular induration of its texture, but its size was about that of a large first. Her former adviser had used many medicines and appliances with but little effect. The patient was twice cupped and leeched over the tumour, and the skin was twice painted over with a preparation which acted like a blister, and was also painted many times with combinations of iodine. She had tonics from the beginning, and daily a solution of bromide of potass. She also passed an electric current through the tumour for half an hour daily, and this was done during two years. The only effect of the treatment hitherto applied was to make the tumour "more compressed or harder." Immediately on her application to me I commenced the administration of the saturated solution of chlorate of potass in dessert-spoonfuls thrice daily, and with what effect I shall allow the patient to tell. "I will add, that about three or four months after I had seen you, and taken the medicine you prescribed, the swelling disappeared as it came, silently and suddenly. I continued your medicine, and the occasional use of the electric battery until a few months ago. I use neither now; and as I said before, I have no swelling; none whatever; none."

I saw this lady in London a short time ago, and I could not discover a vestige of the tumor.

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47. *Uterine Hæmatocele.*—Dr. J. Mathews Duncan publishes (*Edinburgh Medical Journal*, Nov. 1865) three cases to show that intro-peritoneal hæmatocele may be produced by uterine hemorrhage flowing through a Fallopian tube, even while the natural passages for its discharge are unobstructed; and also to show the possible frequency of this occurrence. He does not wish to be understood, however, as denying other sources, or of throwing any doubt on the numerous narratives of cases in which other sources have been demonstrated by *post-mortem* examinations.

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48. *Case of Congenital Jaundice—Umbilical Hemorrhage.*—Dr. James Cappie reported to the Edinburgh Obstetrical Society a case of congenital jaundice which proved fatal on the eighth day by hemorrhage from the umbilicus.

Prof. James Simpson stated that he had seen seen several cases of secondary umbilical hemorrhage, most of which were fatal, and some of them combined with jaundice and thrombosis in the umbilical vein. He had seen cauterization, ligature, a needle, and figure-of-eight suture, and other means usually fail; but lately visited a case with Dr. Moir, where the simple and free application of the saturated solution of perchloride of iron in glycerine arrested the bleeding after other measures seemed useless. Dr. Churchill had recommended a trial of plaster of Paris as a solidifying compress; but he was not aware whether it had been employed in practice.—*Edinburgh Med. Journ.*, June, 1866.

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49. *Early Menstruation.*—Prof. Hubbard communicated the following example of this to the Edinburgh Obstetrical Society (May 23, 1866). In February last a little Irish girl was brought to my clinique, by her parents, presenting the stature and development of a child of eight or ten years of age, but with the mature-looking, shrivelled face, and sallow complexion of womanhood. Her

parents stated, in reply to the usual question, that "her *courses had stopped*," and wanted to know if something could be done to "bring her round." They said the child was eight years of age, and had been "regular" every month since she was five years old until two months ago. In reply to further questions, they said that a discharge of blood appeared regularly from the vagina, lasting three or four days; that she was uniformly in good health as other children until this suppression, since when she had become pale and listless, but retained her appetite for food. No examination of the genital organs was made; but the mammary glands presented no increase of development beyond what is common in children of her age. The expression of the eye and face, however, was that of established puberty. I am not aware that an authentic case of so early an appearance of menstruation (if this can be called such) has been recorded as occurring in a person of the white race.

Dr. Keiller remarked that the case now related seemed to be an instance of so-called *menstruation*, but the evidence adduced was only that of the parents, and not that of Dr. Hubbard, whose personal observation and opinion of the actual occurrence and character of the discharges would have been more satisfactory. He (Dr. K.) was led to make this remark, not because he doubted the probability of the facts being as reported, but because it often happened that the statements of non-professional observers were not so correct as they ought to be; for example, not many months ago a child was brought to the Edinburgh Hospital for Sick Children, and was admitted under his (Dr. K.'s) care, as a case in which, according to the mother's report, menstruation had for some time regularly taken place. This girl was only eight years old, and on admission presented no very obvious features of undue development. She remained in the hospital under close observation for some time, but no such symptoms as those referred to by her mother appeared, and it was reasonably doubted if anything like real menstruation had previously occurred. It could not be denied that bloody discharges occasionally took place from the utero-vaginal mucous membrane of young girls, or even of infants; but it by no means necessarily follows that such discharges were, or ought to be looked upon as *menstrual* in the proper sense of the term.—*Ed. Med. Journ.*, July, 1866.

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50. *On Extreme Surgical Tendencies of Pathologists; and on the Division of the Cervix Uteri.*—Dr. TILT, in a paper read before the Obstetrical Society of London, July 4, 1866, deprecated the extreme surgical tendency that seemed to characterize the present epoch. He gave as a proof of this tendency the frequency with which operations have been discussed at medical societies, the unnecessary multiplication of surgical instruments, and the warmth with which their invention or modification was supported. He likewise noticed two books which have lately appeared: one, a very important work by Dr. Marion Sims, in which constitutional means of curing diseases of women were almost completely ignored; and another, by Mr. I. B. Brown, in which it was recommended to cure hysteria, epilepsy, and insanity by amputation of the clitoris. Dr. Tilt stated that he had known the division of the cervix uteri to have been frequently performed or recommended in cases where he was able to pass the uterine sound, and he submitted that no practitioner was warranted in dividing the cervix, either for sterility or dysmenorrhœa, when the cervical canal had that width; as microscopic animalculæ could find no difficulty in ascending where the uterine sound could pass. He alluded to the difficulty of passing a sound into the virgin womb, which did not interfere with the frequency of conception, in young women, soon after marriage. The author's experience led him to believe that the utility of dividing the cervix uteri had been unintentionally exaggerated. There was no statistics to show that conception was frequent after the operation; and he had frequently been consulted by those who had been operated upon during the last ten years, and who had remained barren. Dr. Tilt argued that there was so great a tendency on the part of the divided surfaces of the cervix to reunite, that the operation was generally useless unless followed up by dilatation; and he thought that in the majority of cases of uterine stricture dilatation was the safest and best way to relieve dysmenorrhœa and to facilitate conception. He wished the division of the cervix to be re-

stricted to cases where the cervical canal was extremely narrow or the cervical walls very hard, and to cases wherein dilatation had proved a failure, or where there was flooding from uterine fibroids. He reserved his opinion respecting the value of the operation in cases of uterine displacement or of malformation; and deprecated the operation being resorted to as a kind of *pis aller* in those intractable forms of uterine disease in which relapses depend either on a congenital unhealthy tendency of the organs of generation, or on some deeply rooted constitutional taint. Dr. Tilt mentioned that in three of his patients the operation had been performed without the knowledge of the patients or their friends, and he took occasion to remark that this did not accord with the usually received notions of medical ethics.

Dr. Henry Bennet thought that Dr. Tilt deserved the thanks of the Society and of the profession for the paper read that evening. Although for the last seven years ill health had kept him out of active practice, he had continued to take the liveliest interest in uterine pathology, and had made himself acquainted with all that had been written and said on the subject. As a result he was deeply impressed with the idea that the therapeutics of uterine disease had taken of late too surgical a direction, and he thought, like Dr. Tilt, that this tendency required restraining, limiting, directing. After a seven years' absence from the debates of the Society, he could not but feel that it was passing strange that he should have to rise as a conservative, and that in the very arena where he had many a time, in former days, defended progress, and where he had been opposed and stigmatized as a rash innovator. When he commenced practice in London twenty-three years ago, uterine therapeutics comprised little else but the treatment of cancer, tumours, prolapsus, and constitutional conditions. The most continued and irrational opposition met his efforts to establish more correct views—to demonstrate that physical means of investigation were as imperatively demanded in the study and treatment of diseases of the uterus as in those of diseases of the heart, lung, bladder, rectum, &c. By degrees, however, the more reasonable ideas gained ground, and the senseless opposition to the progress of science was vanquished. Now it had entirely ceased, and had become a mere remembrance of the past. Indeed, as stated by Dr. Tilt, the danger rather appeared to be in going too far the other way, and interfering too much. This seemed probable when a recent surgical work on female diseases, written by a clever, experienced, laborious American surgeon, his friend, Dr. Marion Sims, proposed division of the cervix uteri on both sides, down to its vaginal attachments, as a remedy for all kinds of morbid conditions, for various deviations, and for sterility. Indeed the Doctor, in one page, stated that he and his colleague in the Female Hospital at New York, performed this operation 500 times in two years. Again, many recent writers and operators seemed imbued with the idea that the passage through the cervical canal to the cavity of the uterus ought to be, what might be termed metaphorically, as open "as a carriage door," constantly finding stricture therein, for which they operate by ruthless divisions, if it is not so. He (Dr. Bennet) believed that this view was founded in error, and that the greater part of these cutting operations were not in any respect called for or necessary. He believed also that this error would not be so constantly made were his discovery of a sphincter at the os internum recollected or recognized. This sphincter was a vital contraction of the circular fibres of the cervix at the os internum, similar in function to the sphincters which closed other cavities—the stomach, rectum, bladder. When the cold uterine sound reached it it contracted, and impeded its entrance into the uterine cavity, and a stricture was declared to exist. A wax bougie, No. 4 or 5, on the contrary, its extremity warmed by the hand, and slightly curved to the shape he had described as that of the uterine passages, generally entered with ease. The patent condition of the cervical passages which these authors appeared to consider necessary for conception was not natural, and certainly not necessary for the entrance of microscopic spermatozoa. It must not be forgotten either, in treating of sterility, that in England one married woman in six is sterile; in America, according to Dr. Marion Sims, one in eight. The causes of sterility were very numerous, and were not to be removed merely by cutting a royal road for the spermatozoa. Moreover, these divisions of the cervix healed up, and in a few

months the narrowed condition was as bad or worse than ever in most cases. Twenty years ago, at Sir James Simpson's instigation, he operated in many cases, and all but abandoned the operation on account of these relapses. Since then he had generally used very small sponges if he wished to dilate, and had never once had an accident. The attacks of inflammation that had occurred in the hands of others had no doubt been caused by the attempted dilatation of inflamed tissues. The cervical canal ought to be perfectly sound when it was interfered with. In conclusion he repeated that he quite agreed with Dr. Tilt that the uterus is now-a-days too frequently interfered with surgically, and that the indications for operations required better defining.

Mr. BAKER BROWN said he thought the paper was brought forward at a most appropriate time, for he perfectly agreed with the author and with the observations of Dr. Henry Bennet that operations upon the cervix uteri were performed too frequently, and without proper regard to preparatory and subsequent treatment. He was glad to have the opportunity of stating before the Society, in the strongest language, his reprehension of the rashness with which this operation was performed in both the out-patients' department of hospitals and the consulting rooms of the operator. He had always taught that the operation of dividing the os and cervix uteri was one of great danger; and although he had performed it a vast number of times, he had never done so without careful preparatory treatment, and the most absolute rest for two or three weeks after the operation. He thought the danger was also increased by the frequent division of the internal os. For his own part, in all cases of flexions, he simply divided the cervix up to, but not through, the internal os; but in all cases of uterine hemorrhage or intra-uterine fibroid tumours, he then carried his incision through the internal os. In all cases, immediately after the operation, he plugged with oiled lint, and took every precaution to prevent the admission of atmospheric air. He believed the neglect of these precautions would generally account for the untoward results which so frequently followed the operation. He could confirm all that Dr. Bennet had said as to the opposition and persecution he had met with in reference to his treatment of uterine diseases; and when he reflected how triumphantly Dr. Bennet had overcome all his opponents by the truth of his practice, he (Mr. Brown) felt consoled for the opposition he received for publishing the results of his experience on a subject of which he as yet confessed himself to be but a learner. But as he had always, through a long professional career, immediately published any innovation which he had believed to be practically useful, so he would continue unto the end, feeling sure that the majority of the profession would always honestly investigate anything which he might place before them.—*Lancet*, Aug. 25, 1866.

HYGIENE.

51. *Organic Impurities in Water.*—No fact is better established than that the use of impure water exercises a very injurious influence on health. Dr. WM. PROCTOR has lately published (*Lancet*, Sept. 8th, 1866) some remarks on the subject which are well worthy of attention. The organic impurities of water are of two kinds: they occur either in a state of solution or in a solid form. There is a curious circumstance pointed out by Dr. P. with regard to the production of the different kinds of organisms found in water, which is that if the water be alkaline, infusoria chiefly show themselves; but if acid, fungoid vegetations were most numerous.

"Almost all water contains some organic matter derived from the soil. Even that from granitic districts contains from 0.3 to 0.7 grains per gallon, whilst water which has permeated vegetable soil may afford 12 to 30 or even more grains per gallon.

"Confining our attention only to the soluble organic matter, this will be found of two kinds—(1) non-nitrogenous, composed of carbon, hydrogen, and

oxygen, the result of vegetable decomposition; (2) nitrogenous, made up of carbon, hydrogen, oxygen, and nitrogen, from the decomposition of animal matter. Occasionally sulphur and phosphorus are added to these constituents; but when this is the case, the odour produced by the resulting sulphuretted or phosphuretted hydrogen at once reveals their presence. Therefore, practically, the elements of noxious and insidious organic matter will be carbon, hydrogen, oxygen, and nitrogen. An invariable result of the decomposition of all animal matter is ammonia, and as the result of a similar change on vegetable matter Hermann has given a list of ten distinct substances. But, without entering into needless detail, we will simply consider the general results of vegetable decay.

"When vegetable mould or humus is boiled with an alkali and an acid is added to the filtered solution, a brown precipitate falls, which (according to Mulder) consists of

Humic acid	$C_{40}H_{12}O_{12}$
Ulmic acid	$C_{40}H_{14}O_{12}$
Geic acid	$C_{40}H_{17}O_{17}$

These substances are all soluble in alkalies and precipitated from that solution by acids. There are two other constituents of humin, the so-called crenic and apocrenic acids, to which the term 'acid' is improperly applied, as they are soluble in acids as well as alkalies. In the formation of these acids no notice has been taken of the contemporaneous formation of carbonic acid and carburets of hydrogen. The decomposition of animal matter gives rise to an extensive series of compounds, among which ammonia and the nitrates prevail largely with the fatty acids and other substances not well understood. One great character of the organic vegetable acids the result of decomposition is their disposition to unite with ammonia—in fact, unless prepared pure by artificial means, they always occur in water with 2.5 to 7 per cent. of ammonia.

"The sources of nitrogenous organic matter are evident and numerous, and are derived from animal excreta or from decomposing animal matter and the refuse of manufactories. The contents of sewers or cesspools drain into springs or rivers, or the water permeates soil more or less impregnated with these things. Water may be contaminated in this manner by a nuisance at a considerable distance from it, but dependent on the porosity or tenacity of the soil. Professor Ansted states that the deepest (non-artesian) well will not drain a circle which is more than half a mile in radius.

"Organic matter in water may be detected by adding to it a few drops of solution of gold and boiling; in proportion to the amount of organic matter, the gold is reduced and precipitates as a dark powder. The alkaline permanganates are extremely useful in this respect: when solutions of these salts are placed in contact with oxidizable organic matter, they speedily lose their beautiful pink colour, the solution becomes colourless, depositing at the same time a brown precipitate. The addition of a few drops of permanganate of potash to water, and undergoing this change, indicates the presence of organic matter. The rationale is simple. The permanganate of potash is a substance rich in loosely combined oxygen; with that agent it oxidizes the organic matter which is destroyed, the permanganic acid itself is deoxidized, reduced to the binoxide, and precipitated. Dr. R. Thompson made a general estimate of the quantity of organic matter by a series of solutions of different strengths, noting the time required to destroy the several colours on the addition of a given quantity of the water to be examined.

"The estimation of the actual amount of organic matter present in water is of vast importance, and is not a matter of difficulty. This is obtained chiefly by two methods—(1) Evaporate a known quantity of the water in a platinum dish on the water bath, having previously added a measured quantity of a solution of carbonate of soda of known strength. The evaporation being completed, the dish is exposed to a temperature of 248° to 260° in an oil bath, and continued until it ceases to lose weight. It is now weighed, and the weight of the dish and the carbonate of soda being subtracted gives the amount of solid residue in the quantity of water employed. The dish with the residue is now

exposed to a dull-red heat until all the organic matter is destroyed. When cool a solution of carbonic acid is added, and the dish again dried until its weight is constant. The difference between this last weight and that before ignition represents the amount of organic and other volatile matter present. (2) The other method of estimation is by permanganate of potash, and has been carefully investigated by Dr. Woods (*Journ. of the Chem. Soc.*, June, 1863). Weigh one gramme (15.43 grains) of dry permanganate of potash, and dissolve in 1 litre (35.28 fluidounces) of pure distilled water, then graduate the solution with oxalic acid by taking 40 c.c. of centinormal oxalic acid (*i. e.*, 0.63 grammes of the acid in 1 litre of water) in 300 c.c. of pure water and 2 c.c. of sulphuric acid, heating to 140° Fahr., and dropping in the permanganate from a burette; 13 c.c. of the pink solution should be exactly decolorized. If not, the correction must be made by a little calculation. Then take 1 litre of the water to be examined, add 2 c.c. of strong sulphuric acid, heat to 140°; remove the heat; drop in the standard solution from a burette, stirring continually, and stop when the faintest pink tint is perceptible. If after a time this disappears, add a little more of the permanganate, and so on until a tint permanent for half an hour is obtained. Then read the number of c.c. used; deduct 0.24 cc. as the quantity of permanganate necessary to give a red tinge to 1 litre of water. We have now the quantity of permanganate decolorized by 1 litre of the water, and Dr. Woods has ascertained that 1 c.c. of solution of the above strength is decomposed by 0.005 grammes (=5 milligrammes) of oxidizable organic matter; therefore multiply the number of c.c. of permanganate solution by 0.005, and the result gives the amount of organic matter in grammes per litre, or, to bring it to grains per gallon, multiply it by 70. This gives of course only the amount of oxidizable organic matter, and is used by Dr. Frankland and others to determine the amount of oxygen necessary for this purpose. Therefore, nitrites, &c., may exist and not be detected by this process. It is not applicable to waters containing protosalts of iron or hydrosulphuric acid.

"Having in this manner proved the existence and quantity of impurity, the next point for consideration is the purification of such water. Ordinary filters simply remove suspended matters; ebullition destroys (and vast is its importance) the vitality of animal and vegetable impurities. But filtration carried on through sand and clay or animal charcoal not only deprives water of mechanical impurities, but, in the latter case especially, removes from it organic matter most effectually, and in all probability by a process of oxidation.

"The tendency of the physiology of the present day is to show that the origin of zymotic diseases is due to the presence of living germs capable of remaining dormant until they are placed in a condition appropriate and necessary for their development. If this is so, and such sources of disease may exist in water, it is questionable if they are, like dead organic matter, susceptible of destruction by oxidation. It is a certain fact that these organisms are capable of destruction by a number of caustic substances, as salts of iron, carbolic acid, etc., which are impracticable when water has to be used for dietetic purposes. The temperature of boiling water likewise destroys the vitality of these germs, admits of practical application, and is in this respect a perfect purifier. Whilst it is doubtful how far the use of filtration through charcoal and permanganate of potash is effectual in the removal of insidious living germs, no doubt can exist of its efficacy in the removal of dead and noxious organic matter. Hence, by a combination of these three methods, the danger of disease from these sources is removed.

"Dr. Medlock has offered a suggestion for the removal of organic matter from water. He observed that water of this description had the amount of organic matter materially lessened after passing through iron pipes—the action of the metal upon that matter being an oxidizing one, converting the nitrogen into nitrous acid, and in this manner breaking up the affinities of the carbon, hydrogen, and oxygen. He states that, by allowing water to remain in contact with a coil of iron wire for twelve hours, all trace of organic matter is removed, or that it is converted from a soluble into an insoluble state, and in this condition capable of being removed by ordinary filtration.

"The superiority of the permanganates for purifying water over filtration

through animal charcoal may be shown by passing water containing organic matter through the latter substance; on testing this filtered liquid with Condy's fluid, it will become in many cases decolorized. The simplicity of the process is one of its great advantages, and even if, from careless application, a portion of the salt is left in solution, or of the peroxide of manganese in suspension, no harm can result. But if the adjustment is carefully made, all the metallic oxide is precipitated, as well as the carbonate of lime (if present) held in solution by excess of carbonic acid, which is neutralized by the liberated alkali of the permanganate, and the water by simple decantation is obtained pure, except probably (when used alone) in the destruction of some organic germs.

"In sulphur water—*i. e.*, that containing hydrosulphuric acid, sulphurous acid, etc.—the colour will be destroyed in the test (on account of the deoxidizing properties of these gases) without the presence of organic matter, and the water left free from impurity with the precipitation of the oxide of manganese and free sulphur. If sulphide of ammonium is present, carbonate of ammonia is formed. Lead, iron, and copper can be separated from water by the same method.

"In the application of these salts to the purification of water on a large scale, many questions of economy are involved, but, as Dr. Letheby remarks, 'it must not be forgotten that only a very small part of the water delivered by a company is used for primary domestic purposes, the great bulk of it being employed for flushing closets, drains, and sewers, for watering streets, and for many manufacturing purposes. It would therefore manifestly be an unnecessary wasteful application of a tedious and expensive process to do that at the works which can be so easily, so surely, and so much more economically done at the point of consumption.'

"Water which is employed for drinking purposes should possess the following properties: It should be clear, colourless, inodorous, and tasteless; it should be well aerated, and especially cool. It is difficult to fix the exact amount of dissolved constituents. As a general rule, subject to limitation, it should not contain more than—of organic matter, 1 grain; of carbonate of lime, 16 grains; of sulphate of lime, 3 grains; of chloride of sodium, 10 grains; of carbonate of soda, 20 grains, per gallon."

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

52. *Poisoning by Tobacco-Juice.*—M. A. Marchant relates the following case: A smoker, in drawing air strongly through an obstructed pipe, in order to make it more permeable, took into his mouth and involuntarily swallowed a dislodged plug of inspissated tobacco-juice. In a short time his head became heavy, his thoughts confused, his speech indistinct; he had noises in the ears, a disagreeable feeling at the epigastrium, and dryness of the throat. Believing that the open air would remove these feelings, the patient went out; but the headache and giddiness increased, and the patient at last fell down insensible, in which condition he was after some time found by a passenger and carried into his house. Copious and repeated vomiting then set in; consciousness returned; but the patient fell into a restless, somnolent state. He had severe headache, *malaise*, and faintness, during the whole of the next day. The spontaneous recovery may be attributed either to the small amount of nicotine contained in the plug, or to the imperfect absorption of the poison contained in the hardened plug.—*Brit. and For., Med. Chir. Rev.*, April, 1866, from *Journal de Bruxelles.*

53. *Death from Swallowing Four Ounces of Chloroform.*—E. C. Board, Esq., reports (*British Med. Journ.*, May 26, 1866) an interesting case of this. The subject of it was a strong, muscular porter, aged forty-two, addicted to drink, who took about four ounces of chloroform, mistaking it for alcohol, and did not find out his error until after that quantity was swallowed. About an

hour afterwards (3½ P.M., May 16th, 1866) "he was brought to the Infirmary, having previously vomited once or twice. He could then just manage to sit up in a chair, but was very cold, and almost pulseless; his pupils were very much dilated, and he could hardly articulate. He seemed scarcely to understand anything said to him, and kept on muttering. The stomach-pump was then used, and altogether about two quarts of warm water were thrown into his stomach, and pumped out again. The water returned almost unchanged as to colour, and with no food mixed with it, but was so impregnated with chloroform as to fill the room and passage outside with a strong smell of that spirit. Brandy was then administered to him; mustard poultices were applied to the præcordial region and the calves of his legs, and he was galvanized for a considerable time with no apparent effect. I then gave him a drop of croton oil, and continued to administer small doses of brandy. In about an hour and a half after admission he rallied a little; the surface became warmer, the pupils contracted, and he was more sensible to the action of the galvanic battery. In half an hour all the worse symptoms returned; the pupils were fully dilated, the breathing stertorous, the surface covered with a cold sweat. He continued to rally for a short time, and then sink again, for an hour and a half, when his lips became dark purple, and his whole face livid. No action of the heart could be detected, and his respiration was gasping and very interrupted. I then applied the galvanic battery for nearly half an hour, when his breathing again became regular, and his lips and face regained their natural colour for a short time; but he then suddenly sank into the former state, and died at a quarter to nine o'clock P.M., six hours after he had taken the chloroform.

"*Post-mortem examination, fifteen hours after death.*—Rigor mortis was well marked. The body was generally well nourished. The calvarium was firmly attached to the dura mater along the mesial line. There was a considerable amount of fluid under the arachnoid, which was thickened and opaque, and did not readily peel off the convolutions. All the ventricles were full (though not distended) of clear fluid. The brain itself was firm, and appeared otherwise healthy. The veins of the cords and the sinuses were very much gorged with blood. The lungs were very much engorged with blood; there were several small patches of pulmonary apoplexy. The heart was healthy; the blood in all the cavities was quite fluid. The stomach was one-quarter full of dark fluid, which smelt very strongly of chloroform. Its internal surface was slightly inflamed in patches, and the mucous membrane was softened. The duodenum and commencement of the jejunum were healthy, but the lower part of the jejunum and the greater part of the ileum were of a dark chocolate colour, and became quite black after an hour or an hour and a half. The parts of the intestine round Peyer's patches were not affected in this manner. The large intestine was perfectly healthy throughout. There was no effusion or exudation into the peritoneal cavity. The liver was of usual size, but fatty. The gall-bladder was full of bile. The kidneys were granular; the capsule peeled off with difficulty. The pancreas, spleen, and bladder were healthy."

AMERICAN INTELLIGENCE.

ORIGINAL COMMUNICATIONS.

Sunstroke treated by the External Use of Ice. By JAMES J. LEVICK, M. D., one of the physicians of Pennsylvania Hospital.

During the intensely hot weather of July, 1866, there were twenty-two cases of sunstroke brought to the Pennsylvania Hospital. With a few exceptions they all presented the strongly marked and now familiar symptoms of this affection. In the week preceding July 18th twelve cases were admitted, of which number seven died. These were all treated with stimulants by the mouth or the rectum, cold affusions and the full bath.

On the 18th cases were brought to the house with frightful rapidity, seven persons in little more than an hour's time. The first of these was treated as the previous ones had been, and died within a few hours. Disheartened by this great mortality, the writer determined to adopt a somewhat different course of treatment, and, acting on a suggestion made by Dr. B. Darrach, late Resident Physician New York City Hospital (see *Am. Journ. Med. Sciences*, January, 1859), the patients were stripped of their clothing, and three men ordered to rub them steadily from head to foot with masses of ice, at the same time that pieces of ice were kept in the axillæ.

The condition of one of these men, and which may fairly be taken as the type of the others, was as follows: entirely unconscious, respiration stertorous, with coarse mucous rales, heart's action tumultuous, pulse so frequent that it could not be counted, skin pungently hot and dry, temperature in the axilla 110° F.

The rubbing with ice was continued for more than an hour before any evidence of returning consciousness was given, and this was first shown by the patient drawing the water into his mouth as the melting ice was passed over his lips. The treatment was continued until consciousness was fully restored, and, when the man could swallow, iced wine and water were given him. On the following morning he was entirely convalescent and was sitting up at his bedside. *Of seven cases thus treated during the* 18*th six recovered.* In the only fatal case, that of an elderly man, a *post-mortem* inspection revealed the existence of old pulmonary disease and of degeneration of the vessels at the base of the brain. On the following day another case was brought to the hospital which had occurred twenty-four hours previously and which proved fatal.

Although it would, perhaps, be unwise to draw positive inferences from the results in these few cases, it cannot yet be denied, especially when we remember the ordinary mortality of this terrible affection, that they were of the most gratifying character, and demand at least a further trial in similar cases.

But to be of use the ice must be thoroughly applied, not by little pieces, but by masses as large as can be conveniently handled, and persevered in until some evidence of returning consciousness is evinced, though this may not be for hours. It is also of great importance that this treatment should

be resorted to early. Recent observations have confirmed the fact, many years ago announced by Dr. Gerhard, that in *sunstroke* the essential pathological condition is an altered state of the blood, one in which it continues fluid after death, and its corpuscles, under the microscope, present a shrivelled and crenated appearance, closely resembling the blood of typhus fever. (See on this subject a paper by the writer in *Am. Journ. Med. Sci.*, January, 1859.) It is believed that by the intense heat such vital and chemical changes are induced in the blood as render it unfit for the nourishment of the organs and the proper performance of their varied functions. These changes are probably progressive, and if they can be arrested before the disorganization is complete life may be saved. On the other hand if permitted to continue, such destruction must soon occur as to render all efforts for recovery unavailing. Surely the remedy commends itself to us by its simplicity, and thus far by its effectiveness.

In concluding this brief notice it may not be amiss to add that, influenced perhaps by the interest which the papers of Dr. Ringer have imparted to the subject of temperature in disease, the state of the thermometer in the axilla was carefully noted in these cases of sunstroke. Its range was from 109° F. to 111°. Even after death, for more than an hour it was found to remain at 110° F. As might have been expected, decomposition occurred very soon after death took place.

1109 Arch Street, Philadelphia, Sept. 18, 1866.

Contagiousness of Typhoid Fever. By A. ROTHROCK, M. D., of McVeytown, Pennsylvania. (Communicated in a letter to Prof. A. Stillé, M. D.)

Some time in the latter part of October, 1846, a freshet swept away a mill-dam in the neighbourhood of McVeytown, Pa., by which the house occupied by Jas. McCay was flooded, the water rising to the depth of several feet in the lower story. After the water fell, this part of the house was found to be in such a filthy condition from deposits of mud, that it was closed and abandoned for the time being. At this time Mrs. McCay had an ordinary attack of bilious intermittent fever of the synochus grade, which was the prevailing type of our fevers previous to that time.

Soon after the occurrence of the freshet, the case of Mrs. McCay assumed a typhoid character, and ran from that period a regular course of typhoid fever for nearly three weeks, when she died.

About four days after the freshet, several other members of the family became ill with typhoid fever, and subsequently every few days another and another was stricken down, until at length the whole family, consisting of, I think, ten members, were attacked by the same disease, except Mr. McCay himself.

Bilious intermitting and remitting fever being the prevailing form of disease in the neighbourhood and in other localities of our borough, the inquiry naturally arose what could be the cause of this unusual manifestation of disease so totally different from what had prevailed in our neighbourhood up to this time? On inquiry I found, what I was not before aware of, that the lower story of the house, as mentioned above, had been abandoned immediately after the freshet, and in it were inclosed all the deposits of mud and vegetable matter left by the freshet, undergoing decomposition and thereby infecting the whole house. The house was immediately cleaned and disinfectants were used, but it was too late. The family were all down, and the disease fully formed ran its regular course. At this juncture there

was a difficulty in getting persons to wait on the sick as regular nurses, and the family were dependent for nursing almost entirely on the charities of their neighbors. A few families were particularly interested in their behalf, and spent much time in waiting on them. They were the first to take the fever. Typhoid fever struck down some of every family who had thus waited on the sick; and in every case when the disease entered a house it ran a regular course until the greater part, if not all of the household were attacked. These again became centres of radiation, and others who waited on them took the disease, and thus it continued to spread from house to house during the whole winter and the greater part of the following summer.

For more than two years it prevailed, preserving its distinct form in every instance, and not a single case occurred that could not be traced directly to its origin in contact with those who were suffering from typhoid fever. Bilious intermittent and remittent fever prevailed epidemically in this district during the autumnal part of each year, until finally bilious remittent and typhoid fever became merged into each other, and we had a mixed form of disease, with the typhoid type predominating. Here the disease ceased to become contagious.

I will here add, that the McCay family, in which the disease originated, suffered so much for want of attendance after it became evident that the disease was contagious, that there was no way of saving them except to break up the family and distribute them as places could be obtained among the neighbours; but they again communicated the fever to families whose humanity prompted them to take in the sufferers.

The disease found its way into the country, and in one family, consisting of the mother and three adult sons, the latter lay from five to seven weeks, all affected with a low grade of typhoid fever. These young men had four married sisters, settled each in a neighbourhood several miles distant from the homestead, and from each other. They all came at different times, as they could leave their homes, and waited on the sick during the progress of the fever. All of these sisters took the disease to their homes, and with their families suffered from typhoid fever, as their brothers had done; and again from these points typhoid fever radiated through their respective neighbourhoods.

Instances could be multiplied to a considerable extent, proving the contagious character of typhoid fever as it occurred in this vicinity, in connection with the visitation just related; but it would be only a repetition in substance of what has already been said.

Effects of the Bite of the Scolopendra heros (Centipede). Communicated by H. C. Wood, Jr., M. D., Prof. of Botany in the University of Pennsylvania.

Dear Doctor: I have recently received an account from a correspondent in Texas, Dr. G. Lindheimer, of the effects of the bite of the centipede, which seems to me worthy of publication, as I have never met with a similar account before.

The species is the *Scolopendra heros*, Girard, which not unfrequently attains the length of eight inches, and a breadth of nearly an inch. Dr. Lindheimer is too well known to the lovers of natural science to necessitate my saying anything about his reliability; the language is his own.

"You wish me to give you as full an account of the symptoms following the bite of the centipede as I can, and ask me if I ever saw a case. Yes.

In the year 1850 I was called to a case six miles off, and when I arrived the little girl was dead. She had survived the bite five or six hours. The whole surface was dappled over with livid spots from the size of a dollar down to a five cent piece, and there was an elastic puffiness, giving the whole person an enlarged or fat appearance. She had been dead but a few minutes when I arrived, and felt so soft and lifelike, that I examined her very carefully, hoping I might find some indications that would encourage me to experiment a little, but the child was dead. The case occurred in this wise—the mother, Mrs. K., was combing her hair, and dropping her comb it fell through a crack in the floor near the wall. The little girl who was about four years old, went immediately out to search for the comb, and running her hand through the fence rail underpinning, the centipede, which had been attracted by the comb, and had not had time to get away, saw her little white fingers approaching the place where the comb had fallen, turned and made another plunge (for he is a beast of prey), and striking the child's thumb near the outer joint, ran up towards the hand, leaving a track on the thumb very similar to what a sharp, small spur would make were it rolled along on the skin. There were five little rosy holes made with the feet, and higher up on the thumb the grab of the caliper-like mandibles was plainly to be seen. The symptoms were, according to the mother's account, instant complaint, which grew rapidly worse, which was described by the child as being all over her. Vomiting of a pale yellow glairy matter supervened, which continued at short intervals with increasing violence, until the child, in a convulsive struggle, ceased to breathe.

Five other cases of centipede bites have occurred in this vicinity, none of whom died. The symptoms were the same as those described in the Keene child till the vomiting ensued; at this stage of its action the pain and suffering were checked in four of the cases; in the fifth case it was checked before it had run so far. The same remedies that will cure the bite of the rattlesnake seem to do no good in cases of centipede bite. From the Mexican Indians we have obtained the antidote, and it was that which was so successfully applied in the five cases named above. When properly prepared and administered, it entirely relieves the patient of all symptoms of poison in about four hours.

I did not see these cases myself, but they occurred close by, and I have no doubt as to their being correctly reported to me; two of them having occurred in the practice of my son Lucullus, who is a physician. The antidote is the roots of the Tephrosia Virginiana, boiled in milk (sweet milk) and taken in doses of half a teacupful, and repeated at intervals of fifteen or twenty minutes. A good handful of the root, as long as the hand is wide, pretty well bruised, and boiled in a quart or three pints of sweet milk, is about an average preparation; but when the bite is a bad one, has been done an hour or two, and the patient is of a robust constitution, the preparation should be liberal. Though the tephrosia is a powerful agent, and, if carried too far beyond the antagonistic action of the poison, is, I presume, not entirely without danger, I have never known any bad symptoms to arise from its use.

The scorpion is of no consequence at all. I said all that is necessary about him in my last letter to you. He travels over all parts of our houses, frequently dropping down upon us from the ceiling, and stinging us in bed. It frightens the women and children, but in all my long life,

it has never happened in the circle of my knowledge, that any serious injury resulted from the sting of the scorpion, and the scorpion I speak of now is the true one."

Fracture of the Internal Condyle of the Femur. By EDWARD M. CURTIS, M. D., of Brasher Falls, New York.

I am induced to report the following case of fracture of the internal condyle of the femur, more on account of the rarity of the accident—Prof. Hamilton, in his work on *Fractures and Dislocations*, only reporting two—than from any peculiarity attendant upon this particular case.

April 23, 1866. David Nevin, æt. fifty, good constitution, temperate habits, and powerful frame, was thrown from his carriage, striking on his right heel, the limb going between the tug and the thill, his body bending inward under the horse, which trampled upon him; he stopped the animal without help and extricated himself. Had severe pain at the knee-joint, and on attempting to step upon the right foot the limb bent inward.

Dr. C. H., being near at hand, was called, and says: The limb was but little swollen; two inches above the joint on the inside there was slight ecchymosis, underneath this, in the popliteal space, quite a prominence could be felt, and on pressing upon it he detected crepitus; the external side of the limb appeared normal, and there was no shortening or malposition of the foot; the patient would not allow him to bend the joint on account of pain. By steady pressure on the projecting point the fracture was reduced, and the patient expressed himself as much relieved. Applied compresses and straight splint.

25*th*. I was called in consultation with Dr. B., and requested to take charge of the case. Swelling great, pain inconsiderable, much tenderness and some ecchymosis on internal but none on external aspect of joint. Placed the limb in fracture-box with compresses underneath and internal to the fractured condyle.

30*th*. Limb looks well, swelling much the same, pain seems increasing; cold water dressings had been used; ordered tr. arnica. Bowels constipated, some torpidity of bladder, gave salts and buchu.

May 3. Fracture keeps in place; patient looks well, rests well, and has a good appetite.

9*th*. Strapped the limb on a double-inclined plain with side pieces for the femur, and compresses as before; bent the knee to an angle of 165° and kept it there half an hour; he complained of a sensation as of some foreign substance within the joint that would not allow it to bend.

June 7. Since the above date the limb has been bent more and more daily, and kept so as long as the patient could bear, and now he can bend it to an angle of 95° without the aid of the splint. He has walked with crutches for the first time to-day.

August 25. Saw Mr. Nevin to-day, he was walking with the aid of a cane, and could bend the knee to something less than a right angle; says it is nearly as strong as ever, but the joint is considerably larger than the left.

Wound of the Abdomen and Intestine, &c.; Recovery. By H. C. MATHIS, M. D., of Taylorsville, Ky.

May 8, 1866. Called to see Barney, coloured man, who in a fray had received the following wounds, made with a pocket-knife. First, one directly across the throat about four inches long, dividing skin, muscles, and fascia,

down to the vessels, but injuring none of the latter. Second. A punctured wound in right chest, dividing all the tissues down to the pleura. Third. A cut upon the back, beginning a few inches to the right of spine, just below the short ribs, passing diagonally across the spine and ribs to the left and upward, dividing all soft tissues, cutting across the angle of the left scapula, and dividing the latissimus dorsi, making a wound twelve inches or more in length, and five inches wide. Fourth. A punctured wound in back, just below right scapula, but not opening the cavity of the chest. The dangerous wound was in the abdomen and one-half inch below and to the left of the umbilicus. This was diagonal and one and three-quarter inches long, through which had been forced upon the ground four and a half feet or more of the ileum, which was much congested and swollen. The intestine was cut in two places about nine inches apart, from which the contents issued. Shock considerable, but was subsiding on my arrival. Patient made very little complaint of pain; vomited twice freely during the manipulation for return of the intestine. It was necessary to cleanse the bowels of dirt and their own secretions, which was effected with a soft cloth and tepid water. The wounds of the intestine were then closed by the uninterrupted silk suture, four stitches in one and five in the other. The bowels were replaced with much difficulty, through so small an opening, in about two hours. The external wounds were drawn together with ordinary sutures. Compress and bandage placed over wound in abdomen. Put to bed with water dressings to wounds; comfortable and easy; pulse 72 and moderately full. Ordered perfect quietude, *no food;* one small dose morphia given to moderate peristaltic action and anticipate sickness and pain.

9*th.* No reaction; some pain; bowels swollen, but not tender. Ordered ice to bowels, morphia every four or six hours; no food. Wound of throat healing by first intention, not the slightest inflammation about it.

10*th.* Vomited this morning; no reaction; pulse 80; bowels soft, without soreness; wounds doing well. Some sutures removed. Ordered abstinence from food, quietude; repeat morphia; ice.

11*th.* Pain in bowels; disposed to vomit; had not rested well. Removed bandage from abdomen; wound pouting, put on a larger compress, fearing the stricture might be at the abdominal wound. Stercoraceous vomiting came on while doing so. Pulse 90. Left him till 12th without ordering anything.

12*th.* Had suffered so much pain a dose of morphia was given without direction. Bowels soft; no tenderness; pulse 90; frequent sharp griping pains, and stercoraceous vomiting. Believed now that there was stricture from spasm or intussusception. Ordered that he should have no morphia whatever for twenty-four hours, and oil to be given about 2 o'clock A. M. It was hoped that the bowels, if left to themselves, might overcome the spasm, or the intussusception, if but slight. Was absent not more than an hour, when messenger came saying, "Barney's bowels had bursted." I found that during a severe pain a *bursting noise* came from his bowels, like the bursting of an inflated bladder, which was very alarming to patient and nurses. But still all was quiet; pulse a little less frequent; bowels soft; no tenderness; no pain. To continue ice; give oil as directed, knowing that if obstruction was overcome the bowels would soon act.

13*th.* Bowels acted early last night, and again from oil. All quiet; pulse 72; wants to eat. Remove ice; give nothing yet this day.

14*th.* External wounds nearly all healed.

15th. Permitted a little food, the first since the injury. From this time all went well, and the tenth day, contrary to directions, he was up and some miles away sawing wood. The fourteenth day I saw him well and hearty. He continues well at this date, June 25th.

DOMESTIC SUMMARY.

Removal of the Uterus and both Ovaries by Abdominal Section—Death from Shock in three hours.—Prof. Charles A. Pope records (*St. Louis Med. and Surg. Journal*, July and August, 1866) a case of this.

The patient was 47 years of age, and the mother of three children. The tumour in the left iliac region was first observed 20 years ago, since when it has gradually increased in size. Two years ago she noticed a tumour on the right side, which has since rapidly enlarged, until of greater size than the first.

Dr. Pope made "an incision along the linea alba, from the umbilicus to pubes. A large vein having been opened, and bleeding freely, I applied ligatures to the cut extremities. The peritoneum was reached and divided, so that I now passed in my hand and explored the tumours. There were some superficial adhesions which were easily overcome, but I found much resistance posteriorly. The uterus was readily recognized as forming the connection between the twin tumours constituted by the enlarged and diseased ovaria. Finding the tumour much too large to pass through the external incision, with a large trocar and canula, I tapped the right sac, and drew off a quantity of thin, puriform liquid; but, owing to the clogging of the tube, I could not empty the sac. I therefore made, with the bistoury, an incision sufficiently free to permit the passage of numerous large flocculi and fibrinoid concretions. Tapping was also performed on the left sac, the liquid from which was thick and purulent, and emitted a heavy, fetid, and sickening odour. The general mass, although now much reduced, could not yet be brought out through the external opening; so that the incision of the linea alba was prolonged for two and a half inches above the umbilicus. In the depression between the uterus and left ovary, the small intestine was firmly adherent, as was also the sigmoid flexure of the colon, quite extensively. By occasional touches of the knife, but mainly by the finger-nails and tearing, I succeeded in detaching them. Some oozing hemorrhage followed, but not considerable, and it was soon arrested. But the worst adhesions were posteriorly and below. These I overcame as far as I could; but the tumours dipping deep into the pelvis, and the patient becoming very feeble, I deemed it best to remove what I could, and with the large mass out of the way, to detach, if possible, any remaining portion of the cysts. With some difficulty I included within the long chain of an écraseur, with a curved extremity—which admitted of a lower embrace of the parts than was possible with a straight instrument—the thick mass of tissues, whose neck (for there was no pedicle) was nearly of the diameter of the pelvis. As this chain was forced down into the pelvic cavity and tightened, I drew up through its loop all that I could of these lowest portions of the sacs; but I found it impossible to include them entirely, a small part of each being left behind. The chain was made to divide the tissues within its grasp very slowly; and such was their resistance and quantity, that the strength of the instrument was taxed almost to its maximum. There was no hemorrhage. Clearing out the abdominal and pelvic cavities, and detaching what I could of the small remnants of the sacs, one of which was firmly adherent to the bladder, I replaced the intestines, which had protruded and caused some inconvenience during the operation, and then brought the external wound well and accurately together by wire sutures. A broad body bandage was placed about the abdomen, and the patient was lifted to her bed. She soon recovered from the effects of the chloroform, and seemed to bear the formidable operation as well as the most of my ovariotomized patients. I ordered some

brandy toddy, with forty drops of laudanum. Although very feeble, she conversed with her husband, and seemed still hopeful. I, however, informed Mr. L. that I had not the slightest expectation of her recovery, and that she might die very soon. No reaction occurred, notwithstanding stimulants and external warmth, and the patient continuing to sink, ceased to breathe in three hours after the operation. No post-mortem examination was allowed.

"On examining the removed mass, I found the whole uterus, with the exception of a very small portion of the neck. Its walls were greatly thickened, and occupied by numerous fibroid tumours, varying in size from a pea to a large walnut. One of these about the fundus, and as large as a pullet's egg, was almost entirely calcified. The uterine cavity was but little changed, and was occupied by a small flat mucous polypus attached to the fundus. The two sacs were closely adherent to the sides of the uterus, their walls being a quarter of an inch thick, and the lining membrane presenting the appearance of a mucoid, or rather of a pyogenic tissue, particularly that of the left side. The whole mass—tumour, sacs, and contents would, I suppose, weigh from twenty to twenty-five pounds.

"In reviewing the case, I must say, that had I foreseen its exact nature and difficulties, I certainly would not have operated. But how impossible is it, even for the most experienced, to foretell all the complications of such and similar cases."

—

Successful Ligation of External Iliac Artery with Silver Wire.—Dr. C. H. MARTIN records (*New Orleans Med. & Surg. Journ.*, Sept. 1866), a case of a coloured man, fifty-three years of age, who had a large fusiform aneurism of the left groin, which pulsated violently, and accompanied with great œdema of the thigh, leg, and foot. "The tumour, passing from under Poupart's ligament, had extended downward, until it protruded into the saphenous opening, lifting up the falciform process of the fascia lata, the crescentic edge of which process, stretched across the tumour, marked it with a distinct sulcus. The artery, from above the epigastric and circumflex ilii arteries, to considerably below the point from which the profunda leaves the femoral, was the seat of an aneurismal tumour."

On the 9th of June Dr. M. ligated the iliac artery "through a line of incision beginning at a point a little outside of the upper and outer edge of the external ring, and extending to a point in a line drawn from the anterior superior spine of the ilium to the umbilicus, and two and a half inches from that process. The incision passed in a plane parallel to the fibres of the tendon of the external oblique muscle, and was just five inches in length. After having cut through the integuments, together with the three muscles, the fascia transversalis was uncovered. I did not cut through this fascia at the point where it was first exposed, but with my hand gently passed between it and the muscle of the same name, I reached a point near the brim of the true pelvis, where the peritoneum leaves this fascia, to be reflected backward over the pelvic viscera. Here a small space is found, filled with cellular tissue, and at this point the fascia was opened, without injury to the peritoneum. Having reached this subfascial space, so to speak, by gently introducing the hand the peritoneum may be lifted upward from the psoas muscle, and the vessel exposed.

"The greatest difficulty in the operation is the opening of the sheath of the vessel, which consists more truly of a mass of dense fibro-cellular tissue, binding the artery and vein close together, than a true arterial sheath. This renders the passage of the aneurismal needle around the artery both difficult and dangerous. I, however, succeeded in opening this, and, separating the vessels, passed from within outward a silver wire (No. 32, of the silversmith's gauge) around the external iliac, at a point half an inch below the bifurcation of the iliac proper. This wire was secured by a double knot; the ends, cut close to the knot, were bent down and returned into the cellular sheath. All pulsation ceased in the tumour immediately upon the knot being drawn, previous to which time it had been intensely violent. The wound was now closed by three sutures of gilded annealed iron wire, which were passed deeply through the integuments and the three muscles, while the space intermediary between these sutures was closely united by pin sutures passed through the skin alone."

On the 14th of July, the patient was walking about, his limb had assumed its natural appearance, the tumour had disappeared.

"Upon the point," says Dr. M., "of ligating so large a vessel as the iliac with a metallic thread, and leaving the same to become encysted around the artery, I am not aware that it has ever before been successfully performed. In 1859 Dr. Stone, of New Orleans, tied the common iliac, for a case of aneurism of the external iliac, with a silver thread; but, unfortunately, his patient died on the twenty-sixth day after the operation, from some disease of the bowels, consequently offering no satisfactory results as to the use of metallic threads in these operations. If it can be established as a safe procedure (and I have no hesitation in saying that it can be), we have gained much in being enabled to close the wound by the first intention, thus lessening the chance of inflammation, suppuration, hernia, and, not least of all, secondary hemorrhage. This usually takes place at the time when the ligature ulcerates through the coats of the artery, and the impetus of the heart's force impelling the blood against the clot, an opening is forced in the weakened tissue of the vessel, and hemorrhage is the result. However, when the metallic thread has been used, and not tied so tight as to rupture the coats of the vessel, ulceration, if it does occur, is at least retarded, until the clot on the proximal side has in a measure become organized, and the vessel obliterated. There being no clot formed on the distal side of the ligature, even should this ligature be late in coming away, and the proximal side perfectly closed by clot, or even obliterated, we still have danger of hemorrhage at the time the ligature separates, dependent upon a recurrent circulation through the sack of the aneurism.

"However, should we have been fortunate enough to place upon the vessel a ligature of some substance which will be slow in producing ulceration, or perhaps not cause it at all, but lie harmless in the tissues, we at least lessen the chances of hemorrhage, and convert a hitherto grave operation into one of comparatively little danger. Even with the advantages offered by these ligatures, it must not be considered that they are entirely free from danger, or that I am disposed, under all circumstances, to advocate their use."

—

Gunshot Fracture of the Skull.—Prof. T. G. Richardson relates (*New Orleans Med. and Surg. Journ.*, July, 1866) the following case of this:—

"A. B., æt. 24, admitted into Jackson Hospital, June, 1864. The day previous, at the battle of Cold Harbor, he had been struck upon the head by a minie ball, which entered the left temporal bone just in front of the top of the ear, and passed out through the frontal bone, about half an inch to the left of the middle of the forehead. The differential appearances of the opening of entrance and exit commonly observed in penetrating wounds of the skull, were well marked; the former being almost circular, but little larger than the ball, and its edges strongly inverted; the latter quite large, irregular, and the bony and cutaneous edges everted and ragged. Cerebral substance, coagulated blood, and fragments of bone were also protruding from the latter. Further examination showed that two lines of fracture extended between the openings, one above and the other below, the latter involving the orbital process of the frontal bone, so that upon taking hold of the supra-orbital arch with the fingers and thumb the fragment, embracing about one-third of the frontal bone, could be readily moved in any direction to the distance of a fourth of one inch or more. The man reported that he had been stunned by the blow, but soon recovered his consciousness and walked to the rear. At the time of my visit, twenty-four hours after the accident, his intellect was not in the least disturbed, pulse and respiration good, no paralysis, no headache, the left eye closed by extravasated blood and œdematous tumefaction. My attention was called to the mobility of the lower half of the frontal bone, upon the corresponding side, of which I fully satisfied myself by raising and depressing it with the fingers, and could plainly trace the line of the upper fracture in this way. No operation was thought advisable, not even the removal of the loose spiculæ of bone, but cloths wrung out of cold water were ordered to be kept constantly applied. Under this treatment the case progressed favorably; the wounds suppurated freely, fragments of skull and an abundance of broken-down brain substance were dis-

charged, the swelling about the eye subsided, and at the end of a week or ten days I found the man sitting up reading a newspaper, and was told that he had not had an unfavourable symptom. In four weeks from the time of the injury, he left the hospital for his home in Georgia, the opening in front of the ear having entirely closed, and the one in the forehead very much contracted, and secreting but a small amount of healthy pus. The sight of the left eye was lost."

Prof. B. maintains that in the treatment of compound, and more especially of gun-shot fractures of the skull, "in the vast majority of cases the only operative procedure" that seems to him justifiable is the removal of loose foreign substances when these can be reached without penetrating too far into the cavity. He insists that instruments "should not be used, simply because there is depressed bone, or even when the depression is attended with symptoms of compression of the brain. Cold water, applied by means of the drip or cloths constantly wetted, until the period of active inflammation is passed, will accomplish all that lies in the surgeon's power. Subsequent results, such as necrosis of bone, epilepsy, etc., are of course not here taken into consideration, and are not sufficiently frequent to govern the primary management."

Amblyopia produced by Osmic Acid.—Dr. HENRY D. NOYES records (*New York Medical Journal*, July, 1866) the following case of this:—

"In June, 1863, Dr. P., assistant in a chemical laboratory, came into my office, stating that he had been suddenly made blind in the left eye in the following manner. He was heating in a crucible a compound of iridium and osmium. He took out a bit of the metal with a pair of forceps for closer inspection, and though aware of the poisonous properties of the fumes, incautiously held it near the left eye. Immediately struck with a sharp pain, he shut the eye and drew back. In ten minutes he came into my office. The lids were spasmodically closed, light very distressing, and pain in the globe severe. The conjunctiva and sclera were intensely injected, and lachrymation profuse. Pupil of natural size and activity. Sight dim, viz., ½, and reads only No. 3, of Jaeger at ten inches. All objects look dim. This dimness is not the effect of lachrymation, because wiping away the tears does not better the vision. Accommodation perfect. There are no muscæ nor phosphenes; the visual field normal. By the ophthalmoscope, both the inverted and upright image, no material change discovered. The media clear, the optic nerve pink, but not unlike the other eye.

"The external inflammatory symptoms continued for one day, and then the eye resumed its normal condition, both in appearance and function.

"Dr. P. informed me that a similar accident had once before occurred to him, and that he had seen an account of such an occurrence to a Russian chemist.

"The impaired sight was not the effect of the irritation of the conjunctiva, because an equal degree may be excited by the presence of a foreign particle, without any amblyopia. Dr. P. and myself were both convinced that a peculiar poisonous influence was exerted on the retina, produced in a marvellously short time, by the simple contact for only an instant of the irritating fumes of osmic acid with the surface of the globe."

Tumour of the Left Optic Thalamus.—The *Boston Med. and Surg. Journ.*, (April 26) contains a brief notice by Dr. MORRILL WYMAN, of an interesting case of this in a girl. The patient first showed some mental disturbance in June last; in July and August she was dull at times, at others excitable and wilful; at the same time she could not write well; then vision was disturbed. This was followed by a general affection of the right side of the body, arm, leg, and tongue, the latter being thrust out obliquely. For the past two months the nausea, which has existed from early in the disease, has been very severe, especially in the morning. Pain in the forehead, severe at times, and occasionally giddiness, followed by loss of consciousness for about five minutes, never attended by convulsions. During one of these attacks, rather longer than usual, she died. November 27th.

The examination of the brain was made by my brother, Prof. Jeffries Wyman, yesterday, and the results were very interesting; they are, in short, as follows:

Nothing peculiar was observed until the ventricles were opened, when a larger quantity of fluid than usual escaped, of a natural colour. On laying the ventricles fully open, it was seen at once that they were not symmetrical; the left was much larger than the right. The floor was rounded out, and the distinction between the optic thalamus and the corpus striatum of the left side was almost completely effaced. The plexus choroides of the left side ran obliquely across the floor of the ventricle over the rounded mass, and was quite different from that of the right; it formed, instead of the symmetrical V-shape, another ⋀, with one arm much longer and more oblique than the other. The fornix was pushed far to the right of the median line; measured across the floor of the ventricle the left was 1½ inches and the other ¼ inch. In cutting through the mass the corpus striatum (left) was pushed quite out from its natural position, and the disease seemed to be in the optic thalamus only, which measured 2¼ inches in depth and 1½ inches in width, and was made up of a lardaceous-looking mass, which cut with much more firmness than the natural substance. The whole mass was as large as an ordinary sized hen's egg, and was somewhat of that shape.

I omitted to state that the layer of epithelium lining the left ventricle was thickened, and of a velvety, almost flocculent look, especially at its anterior part.

—

Comparison of the Right and Left Clavicle.—Dr. J. Wyman alluded, at a meeting of the Boston Society for Medical Improvement (April 23), to the want of symmetry in the clavicles of the two sides of the body, and presented the following table as the result of the comparison of the several parts:—

Pairs of Clavicles.	Length.		Weight.	
	Right.	*Left.*	*Right.*	*Left.*
I.	5.35	5.70	20.150	23.100
II.	5.64	5.64	27.720	20.350
III.	5.55	5.50	24.150	22.540
IV.	5.40	5.57	10.410	10.240
V.	5.55	5.73	17.320	17.290
VI.	5.45	5.73	29.750	30.700
VII.	6.27	6.40	19.800	20.800
VIII.	5.94	5.94	27.200	24.850
IX.	5.86	5.86		

Length in inches and one-hundredths. Weight in grammes.

Maximum length, 6.40 inches. Maximum weight, 30.700.
Minimum " 5.35 " Minimum " 10.240.

Right clavicle longest in 1 pair; left in 5; clavicles equal in 3.
Right " heaviest in 5 pairs; left in 3.

Boston Med. and Surg. Journ., July 16, 1866.

—

Urachus Pervious after Birth.—Dr. G. J. Townsend relates (*Boston Med. and Surg. Journ.*, Sept. 6, 1866) the following case of this: "I was asked to see a little negro five days old, of mixed parentage, and was told he was passing his water through his belly. On inspection, sure enough, every time the infant cried or made any great exertion, the urine bubbled freely from the umbilicus. The cord had separated normally, and the child was in every other respect vigorous and healthy. There was very evident ulceration of the surface, left by the separation of the cord. The question whether the urethra was pervious was solved at the time of the visit in the affirmative, a fair stream spirting forth *per vias naturales*.

"The presence of ulceration at the orifice of the abnormal duct rendered the process of obliterating it very simple. The ulcerated surface was freely cauterized, and the edges of the opening were brought into close apposition and kept there by a strip of adhesive plaster, firmly applied in a longitudinal direction. This was still further secured by a compress of cork covered with wash leather, and kept in place by being stitched to a close-fitting swathe.

"The presence of ulceration in this case may be thought to have some bearing

upon the question as to the manner in which the cord separates, whether by a process of ulceration or absorption. But the ulceration was evidently an accident here, and caused by the acrid fluid passing constantly over a new and delicate surface, and was healed at once by the arrest of the flow. The patient was well in four days, when the swathe was removed.

"Cases of this kind are believed to be very rare, the urachus shrivelling up in the human fœtus in the earlier stages of fœtal life."

—

Formula for Collodion.—Dr. J. P. MAYNARD, who originally introduced this article to the profession, gives (*Boston Med. & Surg. Journ.*, Aug. 9, 1866) the following formula for its preparation best adapted for surgical purposes:—

"Take two parts of sulph. acid, sp. gr. 1.850, and one part nitric acid, sp. gr. 1.450. Mix them—allow the temperature to fall to about 100 Fahrenheit. Add to this, raw cotton, to point of saturation. Let it soak about one to two hours. Pour off the acids. Wash the cotton till litmus paper shows all acidity removed. Dry thoroughly. The cotton will now be found to be converted into a gum, completely soluble in ether of about .750 sp. gr., or in pure ether 3 parts and alcohol 95 per cent. 1 part. About 2 ounces of cotton thus prepared will make about 1 pint of collodion of proper consistency for surgical purposes. For photographic objects, a less amount will be sufficient. The conditions for success by this formula are simply precision in the details and careful manipulation, which a little experience will perfect."

—

Hyposulphite of Soda in Malarial Fevers.—Dr. W. H. BAXTER, of Moscow, Iowa, writes to Prof. N. S. Davis that he was induced by Dr. Leavitt's statement in the No. of this Journal for April last as to the efficacy of the hy sulphite of soda in malarial fever to employ that article. In the last month, Dr. B. says he has treated "over one hundred cases of simple intermittent and remittent fever with this remedy alone, and in no case has there been an exacerbation after taking the remedy a reasonable length of time." He gave it in 15 grain doses in solution in water. He has not trusted to this remedy alone in pernicious or malignant types.

—

Treatment of Burns.—Dr. E. MENDENHALL, of Eaton, Ohio, extols (*Cincinnati Lancet and Observer*, Aug. 1866,) a mixture of one part of turpentine and two parts of sweet oil as an application to burns. This application he states to have proved more satisfactory in its results than any other he has ever used. This application is "easily procured and applied, and can be removed at any time with *facility* and *without pain*; and the soothing effects following the application of the oil and turpentine mixture are far more prompt and complete than any other we have ever known used. The calm feeling of comfort which *always follows* its application the first time, in the manner indicated, cannot, we think, be ascribed to the opiate given at the same time. The result is *too speedy* and *decisive*; and the anodyne, although necessary, as we think, to quiet the agitation, and arouse the system from the effects of 'nervous shock' would hardly allay the smarting, burning, and excruciating pains succeeding such extensive lesions, even if given in much larger doses. We believe this will be the conclusion of any one who will give these agents a fair trial."

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The appreciation manifested by the profession has been such as to exhaust within a few months of publication each successive number for the last two years, notwithstanding the printing of constantly enlarged editions. The number for January, 1866, is now exhausted; while but few copies of the April number are still on hand. New subscribers can, therefore, commence with the July number, which is the first of Vol. LII. To prevent disappointment in this, however, early remittance is desirable.

The "Library Department" of the "MEDICAL NEWS" for 1866 will be occupied with the completion of Dr. C. Handfield Jones' "CLINICAL OBSERVATIONS ON FUNCTIONAL NERVOUS DISORDERS," which has attracted so much commendation during 1865. The portions of the work which have appeared previous to the time of subscribing can be procured.

New subscribers may rely that no exertion will be spared by the editor and publisher to maintain the high character enjoyed by the "JOURNAL" throughout its long career of usefulness. It has arrived at the position of a National Organ of the American Medical Profession, solely devoted to the advancement of scientific medicine, and the liberal support which has been unfailingly extended to it is gratefully acknowledged as a stimulus to increased exertion in the effort to render it worthy a continuance of favor. Identified as it has been with the professional advancement of the last half century, every effort will be made to keep it as heretofore on a level with the most advanced condition of medical progress and to maintain its position as a medium of inter-communication between the profession of America and Europe.

To accomplish this, communications are invited from gentlemen in all parts of the country. All elaborate articles inserted by the Editor are paid for by the Publisher. For many years, the list of contributors has embraced the leading names of the profession in every part of the United States, and it is hoped that the "ORIGINAL DEPARTMENT" of the "JOURNAL" will continue, as heretofore, to represent, both in its variety and practical character, the highest development of scientific medicine in America.

As the aim of the "JOURNAL" is to combine the advantages of all the different kinds of periodicals, its "REVIEW DEPARTMENT" will be found an important feature. Extended and impartial reviews of all important new works are given, together with very numerous bibliographical notices, including nearly all the medical publications of this country and Great Britain, together with the more important continental works. The reader is thus kept thoroughly informed as to the progress and direction of medical literature.

This is followed by the "QUARTERLY SUMMARY OF THE IMPROVEMENTS AND DISCOVERIES IN THE MEDICAL SCIENCES," which presents in a condensed form an abridgment of all facts and investigations of interest which have been made public during the preceding quarter at home and abroad. It is the object of especial care on the part of the Editor, and the ample materials at his command enable him to render it exceedingly complete. It is classified and arranged under appropriate heads, thus facilitating the researches of the reader in pursuit of particular subjects.

The extent and variety of the matter thus laid before subscribers may perhaps best be shown by a very condensed summary of the contents of the last two numbers of the "JOURNAL."

SUMMARY OF CONTENTS OF No. 101, NEW SERIES, FOR JANUARY, 1866.

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I. Researches on Typhus Fever. By J. M. Da Costa, M. D., of Philadelphia.

II. On the Cause of Intermittent and Remittent Fevers, traced to certain species of Palmellæ. By J. H. Salisbury, M. D., of Cleveland, Ohio.

III. On the Causes of Certain Diseases on Ships of War. By Edgar Holden, M. D., of Newark, N. J.

IV Comparative advantages of Pirogoff's, Syme's, and Chopart's Amputations, and Excision of the Ankle-Joint, by Hancock's Method, with the proposition of another Method for Excision. By James M. Holloway, M. D., of Louisville, Ky.

V. On Symptomatic Bronchial Irritation. By A. P. Merrill, M. D., of New York City.

VI. On Puerperal Tetanus. By Wm. A. Gordon, M.D., New Bedford, Mass.

VII The Use of the Artificial Membrana Tympani. By D. B. St. John Roosa, M.D., of New York.

VIII. Successful Removal of the Uterus and both Ovaries by Abdominal Section. By Horatio R. Storer, M. D., of Boston.

IX. Cases of Excision of Bones. By James B. Cutter, M. D., of Newark, N. J. (With two wood-cuts.)

X. Amputation of Right Shoulder-Joint. By W. P. Moon, M. D., Chestnut Hill, Pa (With a wood-cut.)

XI. A Peculiar Case of Hæmatocele. By Charles M. Allin, M. D., of New York.

XII. Instruments for Facilitating Surgical Operations. By D. Prince, M. D., of Jacksonville, Ill. (With two wood-cuts.)

XIII. Reduction of an Inverted Uterus of Seven Months' Standing. By Thomas Addis Emmet, M. D., of New York.

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XIV. Summary of the Transactions of the College of Physicians of Philadelphia.

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XVI. Lectures on the Pathology and Treatment of Lateral and other Forms of Curvature of the Spine. By William Adams, F. R. C. S.

BIBLIOGRAPHICAL NOTICES.

XVII. Transactions of the Medical Society of the State of Pennsylvania, at its Sixteenth Annual Session, held at Altoona, June, 1865.

XVIII. Reports of American Hospitals for the Insane.

XIX. The Practice of Medicine and Surgery applied to the Diseases and Accidents incident to Women. By Wm. H. Byford, A.M., M.D.

XX. Materia Medica for the Use of Students. By John B. Biddle, M.D.

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XXII. Obscure Diseases of the Brain and Mind. By Forbes Winslow, M.D., D.C.L.

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XXX. Patologia e Terapia delle Malattie Veneree di F. J Bumstead.—Bumstead's Pathology and Treatment of Venereal Diseases. Translated into the Italian by Dr. Cirillo Tamburini.

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SUMMARY OF CONTENTS OF No. 102, NEW SERIES, FOR APRIL, 1866.

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I. Microscopic Researches on the Histology and Minute Anatomy of the Spleen and Lacteal and Lymphatic Glands. By J. H. Salisbury, M. D., Cleveland, Ohio. (With a plate.)
II. Reflections upon the Epidemic of Yellow Fever at Pensacola in 1863. By B. F Gibbs, M.D., U. S. N.
III. Hospital Gangrene at Patterson Park Hospital, Balt. By W. Kempster, M.D., of Syracuse, N Y.
IV. On Ether as a Local Application. By J. J. Black, M.D., of Philadelphia.
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XIV. Case of Ovariotomy. By James E. Reeves, M.D., Fairmont, W. Va.
XV. Reduction of an Inverted Uterus of Eight Months' Duration. By Thomas Addis Emmett, M.D., New York.

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The old edition, which is now superseded by the new, has been universally looked upon by the medical profession as a work of immense research and great value. The new has increased usefulness; for medicine, in all its branches, has been making such progress that many new terms and subjects have recently been introduced: all of which may be found fully defined in the present edition. We know of no other dictionary in the English language that can bear a comparison with it in point of completeness of subjects and accuracy of statement.—*N. Y. Druggists' Circular*, 1865.

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